Fall 2012

An Analysis of Secondary School Teachers' Perceptions of Block Scheduling

Vern Mamon

AN ANALYSIS OF SECONDARY SCHOOL TEACHERS' PERCEPTIONS OF BLOCK SCHEDULING

by

VERN MAMON

(Under the Direction of Lucindia Chance)

ABSTRACT

The purpose of this mixed method study was to examine the perceptions of public secondary school teachers regarding block scheduling and to identify the perceived advantages and disadvantages of using the block schedule in three secondary schools in one suburban school system in Georgia. Perceptions of teachers were obtained from data collected from a 23-item survey and three focus group discussions.

The study concluded that secondary teachers' perceptions of block scheduling were generally favorable. However, some teachers did firmly support some statements on block scheduling. The study suggested there is not a significant difference in teachers' perceptions based on grade level assignment and professional development experiences. However, teachers with 11-15 years of teaching experience had more favorable perceptions of block scheduling than teachers with 6-10 years of teaching experience.

Qualitative data were collected from three focus groups. A third party conducted one focus group in each of the three schools with a total of $N = 21$ participants. Themes were developed by combining responses from the $N = 3$ focus group sites. Teachers had mixed impressions of block scheduling. However, cited advantages far outweighed the disadvantages. Themes included: 90-minute planning period and better relationships

with students. Disadvantages of block scheduling included less time for parental involvement and condensed curriculum content. Recommendations for further research to include: a large scale study be conducted that includes all Georgia secondary schools; a more comprehensive study be conducted that includes students, teachers, administrators, and parents; a study be conducted on the influence of the block schedule on student success in college and/or the workplace; future researchers conduct empirical studies of student achievement in content areas in schools utilizing the block schedule.

INDEX WORDS: Block scheduling, Secondary schools, Teachers' perceptions

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A Dissertation Submitted to the Graduate Faculty of Georgia Southern University in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

STATESBORO, GEORGIA

2012

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Electronic Version Approved:
December 2012

DEDICATION

I dedicate this dissertation to my wife June Mamon and my son Travis Mamon.

ACKNOWLEDGEMENTS

I wish to express my sincere thanks and gratitude for assistance, cooperation, and support for the completion of my dissertation to the following people: Dr. Lucindia Chance, committee chairperson; Dr. Yasar Bodur, methodologist and Dr. Dawn Tysinger, all members of my committee.

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CHAPTER I

INTRODUCTION

The reorganization of secondary schools around longer classes as a reform strategy has been the focus of much policy and research attention. In order for positive changes to occur in students' learning experiences, the delivery of instruction needs to be restructured. Block scheduling, which decreases the number of classes students take each semester, providing more instructional time on a daily basis, is one such option (Hardre, 2008; Hardre, Davis, & Sullivan, 2008; Hynes-Hunter & Avery, 2007). As a reform initiative since the 1980s, block scheduling became a popular alternative to traditional scheduling in secondary schools to provide extended class time to increase academic achievement of students (Irschmer, 1996; Jackson & Davis, 2000; Maltese, Dexter, Tai, & Sadler, 2007; Martin-Carreras, 2006).

Block scheduling provides additional time for students to engage in learning experiences in the classroom (Gullatt, 2006). According to McCoy and Taylor (2000), the National Association of Secondary School Principals (NASSP, 1996) made a call for educational administrators to redesign the instructional schedule to increase time for students to engage in the learning process in core classes. The NASSP explained that students should have time to learn the content studied in-depth rather than in greater breadth. The concern of the NASSP and other proponents of in-depth learning (Anfara, 2001; Cadwalader, 2008; Fletcher, 1997) was that standardized test data in secondary schools throughout the United States were showing an increase in the academic failure of students, suggesting instructional exclusion of important information. The NASSP (1996) suggested that block scheduling could have important nonacademic advantages as

well, including "a calmer school atmosphere, better discipline, and improved student attitudes. Intensive block schedules could be particularly helpful to at-risk students, reducing both failure and dropout rates" (p. 253).

Block scheduling entails having students enroll in fewer classes but staying in each class for longer periods of time. In comparison to traditional class schedules from 50 to 55 minutes each, block scheduled classes could last from 90 to 120 minutes each. Block scheduling provides extra time for students to experiment and practice as well as time for teachers to provide remediation (Ryan & Cooper, 2008).

In the literature, some researchers described block scheduling as advantageous for instructional delivery, student achievement, and positive social development (Biesinger, Crippen, & Muis, 2008; Fisher & Frey, 2007; Lim, 2007). Other researchers identified disadvantages of block scheduling, such as scheduling conflicts, which reduce students' participation in varied programs (Lim, 2007), the need for professional development for teachers on how to use effectively the time provided in a block schedule (Biesinger et al., 2008), and inadequate use of instructional time (Fisher & Frey, 2007). However, researchers were inconclusive about the effects of block scheduling on attendance, dropout rates, and test scores of secondary school students (Reichstetter & Baenan, 2005; Trenta & Newman, 2002; Veal & Flinders, 2001). Even less conclusive data were available about teachers' perceptions of block scheduling and its advantages and disadvantages in the instructional setting (Canady, 1990; Canady & Rettig, 1995; Wilcox-Herzog, 2002; Wronkovich, Hess, & Robinson, 1997). The present study will examine teachers' perceptions of the advantages and disadvantages of block scheduling. To understand the nature and context of block scheduling, it is important to explore the

theoretical basis of block scheduling as well as teachers' perceptions of the advantages and disadvantages of block scheduling as practiced in the local setting. The next section includes the background and historical basis of block scheduling identified by researchers in the literature.

Background and Historical Basis of Block Scheduling

Block scheduling, an innovation grounded in Trump's (1958) Flexible Modular Scheduling Design, reorganized the school day into extended blocks of time. Block scheduling emerged as an instructional method that provided expanded classroom time to allow for cooperative learning, inquiry, and interactive techniques (Hackman, 1995). Teachers could benefit from increased useable instructional time because of fewer transitions and less time lost with class openings and closings. According to Lee and Ready (2007), fewer class changes resulted in a less stressful and more productive school environment. Teachers plan lessons for extended periods and effectively employ a daily 90-minute planning period in many block scheduling plans (Carroll, 1994; Friedman & Waggoner, 2010; Guskey & Kifer, 1995).

Cobb, Abate, and Baker (1999) stated that the block scheduling method was a direct result of criticisms and demands placed on the public educational reform movement of the 1980s. As a response to this criticism, new policies were adopted as a means to satisfy new state mandates and initiatives. Interestingly, Lawrence and McPherson (2000) found that the major catalyst for national school reform was the National Commission on Education's 1983 report, *A Nation at Risk.*

A Nation at Risk: The Imperative for Educational Reform (National Commission on Excellence in Education, 1983) sparked national debate that forced Americans to

reevaluate national public school policy (Lawrence & McPherson, 2000). *A Nation at Risk* offered specific recommendations for reform, which identified three basic themes: raise performance standards, measure results, and hold teachers and administrators accountable for student performance (Casey, Bicard, & Cooley-Nichols, 2008). Since the publication of *A Nation at Risk*, the use of block scheduling increased as a reform initiative in secondary schools (Martin-Carreras, 2006).

The *No Child Left Behind Act of 2001* (NCLB, 2002) was intended to provide children in Grades K-12 equal and fair educational opportunities. NCLB differed from previous state and federal programs, because it emphasized accountability as part of a national effort to maximize student academic performance. Under NCLB, schools must measure students' achievement levels with standardized tests and must show that students, including students with disabilities, are showing adequate yearly progress (AYP). Each school was mandated to meet or exceed predetermined levels by 2014 to make adequate yearly progress (AYP). If a school does not meet AYP goals for all students, it does not meet AYP for the entire school. If test scores do not improve, schools must make improvement plans. NCLB also requires each state to produce annual reports on AYP progress at both the state and local levels (Lee, 2006; Rinke & Valli, 2009; Wargo, 2006).

Positive Aspects of the Block Scheduling

To meet the mandates of NCLB (2002) relative to accountability and standards-based testing, educators in schools use selected strategies to alter the structure of the school day to increase instructional time and more effectively extend learning opportunities (Heck & Hallinger, 2009). Block scheduling became a popular option for

changing the structure of the school day to increase time for instruction and student learning (Rinke & Valli, 2009). According to the National Center for Education Statistics, 34.5% of American public secondary schools used block scheduling in the 2003-2004 school year (U.S. Department of Education, National Center for Education Statistics, 2004). For the 2003-2004 school year, in Georgia, 40.6% (214 schools in 121 systems) were on the block schedule (Georgia Department of Education, 2004; U.S. Department of Education, 2004). For the same period, the highest incidence of block scheduling was found in the District of Columbia schools (65.8%) and the lowest incidence was in North Dakota (11.7%) (U.S. Department of Education, National Center for Education Statistics, 2004). In schools where block scheduling has continued to be the reform in curriculum and instruction, educators report that fewer, longer instructional blocks are more beneficial to the advancement of students than shorter blocks (Rinke & Valli, 2009).

Cawelti (1994) postulated that secondary school delivery of instruction needed restructuring in an effort to achieve positive changes in students' learning experiences. The concept of block scheduling emerged in American secondary schools as the answer to meeting the needs of students; this type of scheduling increases class time daily and decreases the number of classes each student completes per semester (Cawelti, 1994). Thus, block scheduling is one of the most widely accepted strategies used to increase student learning (Kearney & Smith, 2009; National Commission on Time and Learning, 1994; Rickard & Banville, 2005).

Block scheduling allows school officials to add more classes to the curriculum to meet NCLB standards because of its flexibility (Queen, 2008). Block scheduling could

reduce or eliminate problems prevalent in classrooms on traditional schedules, such as vast number of subjects, different class rules and instructional procedures, multiple homework assignments, and disjointed curricula (Biesinger et al., 2008).

Queen (2008) identified four positive components of block scheduling, including flexibility in classroom instruction, longer planning periods for teachers, one or two class preparations per semester, and extended time during the school day for intense study. These four components represent potential benefits when a school system moves its secondary educational schools to block scheduling. The reorganization of instructional time into longer, more flexible blocks offered possibilities to extend classroom experiences, to reduce discipline problems, to improve student attendance, and to decrease failure rates (Biesinger et al., 2008; Canady & Rettig, 1996; Queen, 2008). However, some adverse effects resulted from block scheduling. The next section describes some of the adverse effects.

Challenges of Block Scheduling

Lim (2007) identified some of the concerns associated with moving from traditional scheduling to block scheduling. Three provisions must be addressed prior to the introduction of block scheduling in school systems. The provisions include (a) staff development training to implement block scheduling, (b) the evaluation of teacher performance procedures, and (c) the amount of instructional time needed regarding the length of each block.

Staff development. Biesinger et al. (2008) observed teachers in their classrooms and did not identify any significant change in the number and type of teacher-initiated activities and strategies over the course of the school year. Biesinger et al. concluded that

teachers needed professional development on how to effectively use the additional time provided in the block schedule. Likewise, results of a study conducted by Jenkins, Queen, and Algozzine (2002) found that of 2,167 North Carolina teachers who used both block and traditional teaching strategies, the selection of strategies reflected the level of staff development they received.

Teacher performance. Bottge, Gugerty, Serlin, and Moon (2003) investigated teacher performance in traditional and block scheduled formats and found that teachers in block scheduled formats spent more time working with students in small groups and with individual students than lecturing. However, teachers in both formats tended to collaborate with each other, although teachers in the block scheduling format perceived collaboration as more valuable than teachers in the traditional schedule format. Bottge et al. (2003) also found that moving from a traditional schedule does not always mean that teachers will modify their instructional methods.

Instructional time. Increasing class time and shortening the number of classes per day often reduced the attention to, and participation in, the fine arts programs due to students' scheduling conflicts (Baker, 2009). In addition, music educators in many schools noted a considerable decrease in student enrollment because administrators adopted block scheduling as the scheduling configuration for the school. Hynes-Hunter and Avery's (2007) study of the effects of block scheduling, applying 90- to 120-minute periods, on student achievement in Grades 6 to 12, suggested mixed results for using block scheduling. Students enrolled in secondary physical education classes in four secondary schools and one middle school in the northeast, and one secondary school and one middle school on the west coast of the United States, participated in the study.

Two investigators collected and analyzed quantitative data generated from observations of 297 classes (three lessons within each unit, for three units, for each physical educator in the school, in each of the seven schools) over a two-year period. The results indicated that students spent considerable time while waiting and in management and less time engaged in physical education activities. Thus, while block scheduling has advantages, including a larger block of time to carry out state and national learning standards, the results of the study suggested that block scheduling may not be effective due to students spending more time waiting and less time engaged in meaningful activity.

Teachers' Perceptions of Block Scheduling

Debate and discussions about the effectiveness of block scheduling on student achievement and self-efficacy continue among educators in schools. However, little agreement among researchers and educators exists about the true benefits of block scheduling based on empirical data (Ryan & Cooper, 2008; Zepeda & Mayers, 2006). The most common weaknesses reported within scholarly research on block scheduling include the omission of key contextual information, failure to track changes adequately in teacher behaviors, and a lack of clarity about block scheduling interventions based on the views of teachers and students, the populations most affected by the interventions (Zepeda & Mayers, 2006).

Zepeda and Mayers (2006) reviewed 58 empirical studies on block scheduling and noted that a majority did not adequately describe the contexts in which the studies took place, the instruments and research and analysis methods used, or the stability of the data collected. Zepeda and Mayers stated:

> From the lack of description within and across the studies of the groupings, it was clear that research focused primarily on smaller units within the schools, without much attention to examining the change in the contexts in which the studies occurred. (Zepeda & Meyers, 2006, p. 159)

Results from the study showed that teachers supported block scheduling and indicated that extended class time that block scheduling provided enabled students to experience enhanced learning in classes (Zepeda & Mayers, 2006). The researchers called attention to the fact that they could not make comparisons about how teachers viewed block scheduling in comparison to traditional scheduling, because the teachers in the study were new to block scheduling or were new to teaching and had no experience with traditional schedules. Limited research is available on teachers' perceptions of block scheduling from teachers who have moved from traditional schedules to sustained implementation of block scheduling. In order for block scheduling to be effective, teachers must first accept block scheduling, be convinced that it will improve students' academic achievement, and understand fully how to teach effectively in a block scheduled configured school day (Hackman, 1995).

A qualitative study by Crowe (2006) identified and compared teachers' perceptions of block scheduling. He posed two questions: What are teachers' perceptions of block scheduling? What similarities and differences exist among teachers regarding their perceptions of block scheduling? Sixteen teachers participated in the study. In-depth interviews about their perceptions of block scheduling were asked of the participants. The results of the study suggested participants overall had positive

perceptions of block scheduling, and none of the participants expressed a preference for returning to a traditional schedule.

Grumet (2010) described a session of a master of education course in which students (teachers) became engaged in a lively discussion about block scheduling. Most of the students opposed block scheduling and supported the successful efforts of their peers to interfere with the attempts of the school district to impose block scheduling on its secondary schools. However, toward the end of the discussion, one individual indicated that he favored block scheduling, and other students changed their focus and supported block scheduling as well. Canady and Rettig (1996) suggested block scheduling was most beneficial in enhancing academic achievement among students. Queen (2008) outlined the major steps for implementing block scheduling, and these steps remain imperative for schools considering and using a block schedule. Professional issues stemming from the implementation of block scheduling include an increased need to apply differentiated instruction geared to the individual needs of each student. Therefore, it is important to study teachers' perceptions of this method.

Statement of the Problem

Block scheduling expanded slowly and became widely accepted after it emerged as a part of the school reform movement of the early 1990s. Block scheduling has proven to be neither an innovative change nor a short-lived strategy. Educators in many secondary schools have found block scheduling to be an answer to time needed for extended student engagement. The block scheduling literature suggests that even though teachers are supportive of block scheduling, in general, the effects of block scheduling differ in key areas of students' performance, including attendance at school, dropout

rates, and test scores. Therefore, scholarly attempts to collect data in support of block scheduling are inconclusive. The purpose of this study is to explore teachers' perceptions of block scheduling.

Perceptions, positive or negative, can have a significant impact on programs and concepts in education. Teachers have been almost universally considered the most important force in educational reform and their perceptions are an integral component of any school reform initiative. The successful implementation of block scheduling depends on the attitudes and perceptions of those who orchestrate the learning environment and activities and evaluate student success. If block scheduling is to be successful, teachers should be involved in the development of instructional strategies and school structures that make blocks of time productive learning environments. This study has the potential to offer practical direction for educators who may be considering block scheduling. Having an understanding of the challenges that other teachers have encountered can assist administrators in avoiding similar challenges in comparable environments and help create supportive, productive learning environments. The results of the study can serve as an addition to previous research regarding the effectiveness of block scheduling.

Research Questions

To guide the research, the following research questions were developed:

1. What are secondary teachers' perceptions of block scheduling?
2. What is the impact of grade level taught on secondary teachers' perceptions of block scheduling?
3. What is the impact of years of teaching experience in a block schedule design on secondary teachers' perceptions of block scheduling?

4. What is the impact of professional development experiences on secondary teachers' perceptions of block scheduling?
5. What are secondary teachers' impressions of the block scheduling format?
6. Have secondary teachers' instructional practices been affected by block scheduling? If so, how, and in what ways?
7. To what extent, if any, have students benefited from the block scheduling format, as perceived by secondary teachers?
8. What are the advantages of block scheduling, as perceived by secondary teachers?
9. What are the disadvantages of block scheduling, as perceived by secondary teachers?
10. What features of block scheduling did secondary teachers like *best*?
11. What features of block scheduling did secondary teachers like *least?*

Importance of the Study

Gullatt (2006) stated that block scheduling allows teachers to incorporate different teaching styles effectively in their lessons. Using different teaching styles results in students acquiring different strategies to grasp in-depth information in each class by using different learning styles. Gardner (1983) stated that individuals learn via different learning styles or a combination of learning styles: "interpersonal, intrapersonal, visual, kinesthetic, spatial, auditory, and logical" (p. 23). It is, therefore, imperative for teachers to teach each student's learning style, and increased class time, through block scheduling, affords teachers this opportunity. Canady and Rettig (1996) identified significant benefits students acquire from the implementation of block scheduling in secondary

schools. The 90-minute block provides extended classroom instruction that promotes a wide range of instructional techniques to meet the diverse learning needs of students.

Additionally, this study is significant, because it will investigate teachers' perceptions and impact of block scheduling. Negative perceptions or positive perceptions respectively might be visible in teaching. This study will contribute to the profession by providing teacher input to school leaders and policymakers regarding positive and negative perceptions of the impact of block scheduling on their instruction. This input will provide an opportunity for educational leaders, policymakers, and educator preparation faculty to examine current practices related to block scheduling and consider possible change based on teacher perceptions.

Procedures

Following dissertation committee approval, authorization to conduct research in the selected school system was obtained from the Assistant Superintendent of Curriculum and Instruction. Permission to conduct research was also obtained from Georgia Southern University's Institutional Review Board (IRB).

This study utilized a mixed methodological approach, employing both quantitative and qualitative data, to examine teachers' perceptions of block scheduling in identified public secondary schools in Georgia. The procedures for this study involved gathering data from a valid and reliable survey instrument and finding emergent themes from transcribed group interviews. All certified teachers in three selected secondary schools in a suburban school system in Georgia (N = 364) were asked to participate in the study. Teachers were invited via a letter in their school mailbox to participate in the study. Based on predefined criteria (at least three years of teaching experience using the

traditional scheduling model and three years of block scheduling experience), approximately 138 secondary teachers were selected to complete a survey developed by Todd (2008). The survey instrument was analyzed to identify respondents with positive, neutral (neither negative nor positive), and negative perceptions of block scheduling. Informed consent forms accompanied the survey instruments.

Twenty-one survey responders were selected to participate in focus group discussions based on their willingness to participate. One focus group per secondary school ($N = 3$) was conducted, consisting of $n = 7$, $n = 7$, $n = 7$ classroom teachers per focus group, respectively. An attempt was made to select responders who scored the surveys in a positive or negative manner. The focus group discussions were designed to supplement the data obtained from the survey, enabling the researcher to examine in greater depth some important and salient issues in block scheduling. Focus group participants were asked to read and sign an informed consent form before interviews were conducted.

Survey data were reported as frequency of responses to a Likert-type rating scale. Ratings are on a continuum from 1 to 4 (1 = *strongly disagree*; 2 = *disagree*; 3 = *agree*; 4 = *strongly agree*). A two-way analysis of variance (ANOVA) was used to determine the relationship between grade level taught and years of teaching experience (independent/ grouping variables) and teachers' perceptions of block teaching (dependent variable). An independent-samples *t* test was used to determine the relationship between teachers' perceptions of block scheduling and professional development experience of secondary teachers. PASW® STATISTICS 17.0 for Windows version 17.0 software was used to analyze data. The level of significance to reject the null hypothesis was set at .05.

Limitations/Delimitations

Limitations

The limitations of the study were:

1. Participants included secondary school teachers in three suburban schools in a Georgia school system.
2. All participants had at least three years of teaching experience using block scheduling and three years of teaching experience using traditional scheduling.
3. The data collection used in this study consisted of a survey questionnaire and focus group interviews. Surveys and interviews are self-report measurement techniques designed to question people about themselves, their attitudes, or behaviors (Creswell, 2003). This type of measurement can be potential sources of unreliable answers. Participants may not be honest in their responses.
4. The perceptions are unique to the participating school district and not representative of a larger population.

Delimitations

The delimitations of the study were:

1. Non-certified teachers were not selected to participate in the study.
2. Teachers who do not have at least three years of experience in a traditional school schedule and at least three years of experience in a block scheduled school did not participate in the study.

Definition of Terms

The following terms apply in this study:

A/B block schedule – A/B block schedule is a configuration of the school day in which the number of classes per day reduces and the amount of time allocated to each class increases. The A/B block schedule has four 90-minute class periods, which is a change in the traditional schedule of seven 50-minute class periods (Cawelti, 1994).

Block schedule – Block schedule is the reconfiguration of the calendar year that includes class time for more than 50-55 minute periods (Cawelti, 1994).

Four-by-four semester plan block schedule – On the 4 x 4 block, a student takes four classes per semester as opposed to six classes. The four classes meet daily for 90 minutes (Cawelti, 1994).

Secondary school – A secondary school is a school which serves students in Grades 9-12.

Traditional schedule – A traditional schedule is a school-day configuration in which the calendar days consist of six or seven class periods, which meet 50-55 minutes (Cawelti, 1994).

Summary

The reorganization of secondary schools around longer classes as a reform strategy has been the focus of much policy and research attention. In order for positive changes to occur in students' learning experiences, the delivery of instruction needed to be restructured (Raywid, 1981; Schroth & Dixon, 1996; Shortt & Thayer, 1999). Block scheduling decreases the number of classes students take each semester while providing

more class time on a daily basis (Weiss, 1993; Wilcox-Herzog, 2002). Many schools implement block scheduling as the answer to extended class time.

Four positive components of block scheduling include: flexibility in classroom instruction, longer periods for teacher planning, one or two class preparations per semester, and more time for intense study (Campbell, McNamara, & Gilroy, 2004; West, 1996). There is a need to examine teachers' perceptions of block scheduling, because the goal of block scheduling is to increase student learning. Teachers' perceptions could affect student learning (Eberle, 2003). A better understanding of teachers' perceptions regarding block scheduling could inform the profession about the needs of teachers in effectively implementing the block schedule model. The purpose of this study was to explore teachers' perceptions of block scheduling.

CHAPTER II

REVIEW OF RESEARCH AND RELATED LITERATURE

Introduction

A number of studies about the impact of block scheduling on student achievement and teachers' perceptions and instructional practices in block scheduling are available. However, results of such studies vary because of the lack of empirical agreement among researchers and educators about the benefits of block scheduling (Ryan & Cooper, 2008; Zepeda & Mayers, 2006). Omissions include key information about the type of block scheduling studies, study settings, and unclear perceptions of teachers' and students' views of block scheduling (Zepeda & Mayers, 2006). Chapter 2 reviews the literature relevant to the impact and perceptions of block scheduling. Topics include a discussion of secondary school scheduling, pros and cons of block scheduling, and studies of teachers' perceptions of block scheduling.

Context and Background

History of Secondary Education

During the 17th and 18th centuries, education in the United States consisted primarily of private academies and tutors who prepared wealthy boys for college. Tuition at the academies reflected regional and local needs. The college preparatory curriculum focused on the classics and Greek and Latin. As the population grew and the merchant and craftsmen class increased, private academies, called English academies, began to offer classes to prepare the sons of the middle-class families for commerce. Rather than Latin and Greek, the curriculum consisted of modern languages, literature, natural science, history, and geography (Urban & Wagoner, 2004).

In the early 1800s in America, public schools began under the description of common schools, which provided educational opportunities for young children. In common schools, the curriculum included reading, writing, arithmetic, history, and geography (Urban & Wagoner, 2004). The first public secondary school, English High School, opened in Boston in 1821 and offered an alternative to private academies and to college preparatory curriculum. Secondary schools became more common in Massachusetts after an 1827 law required towns to provide a free public secondary school. Secondary schools throughout the United States grew with the largest growth among schools occurring in urban areas (Urban & Wagoner, 2004).

Many early secondary schools did not admit female children or children of minorities. However, in 1826 the secondary school for girls began operating in Boston, but this school discontinued after being in operation for two years. Then in 1857, girls began enrolling in public secondary school when the Boston Girls High and Normal School opened. During the latter part of the 1800s and the early 1900s, urban secondary schools began offering a normal curriculum, which provided training for young women to prepare them to teach in local elementary schools (Urban & Wagner, 2004).

Prior to the Civil War (1861-1865), there were only 300 public secondary schools in the United States. However, by 1900 there were more than 6,000 secondary schools graduating students primarily aged 17 (Goldin & Katz, 1999). The variety of curricula increased along with the growth of public secondary schools. However, there were no standards for curricula and no articulation between secondary schools and colleges, which affected the ability of students to enter college. To standardize the curriculum and simplify the college admission process, the National Education Association sponsored the

Committee of 10 in 1892, which consisted of 10 influential educators from colleges and universities who examined a central question, what makes up a good secondary education? The Committee of 10 recommended a rigorous academic curriculum for students, whether they were college-bound learners or not, and asserted that the mission of secondary schools was to train the intellect. Secondary schools were responsible for designing curricula that focused on nine core subjects: Latin, Greek, English, modern languages, mathematics, sciences, natural history, history (including economics and government), and geography. In addition to curriculum standardization, accrediting agencies were established to bridge the gap between colleges and universities and to standardize the evaluation of secondary school programs (Goldin & Katz, 1999; Hardre, 2008; Margolis & Nagel, 2006).

In the early 20th century, as the population of secondary schools swelled, educators noted that many of the students in secondary schools did not plan to attend college. Therefore, educators believed schools needed to expand the rigorous academic curriculum to include more practical subjects. For example, educators recommended that social and vocational skills be emphasized to prepare students for later life. This led to different organizations. During the late 19th and early 20th centuries schools offered eight years of elementary school and four years of secondary school. In 1910 the junior high school, Grades 7 through 9, operated in California and Ohio. This organization provided greater flexibility in the curriculum and allowed students to transition gradually to secondary school.

In the 1960s, middle schools (grades 6 through 8) emerged. The purpose of middle schools is to meet the intellectual, social, and physical needs of young adolescents

rather than to prepare them for secondary school. The pattern used in school systems that implement middle schools include five years of elementary school, three years of middle school, and four years of secondary school. The structural and curricular changes in middle schools included advisories–long-term student groups that meet with one faculty member over a period; team planning and teaching; exploratory classes, and adequate health and physical education classes (Urban & Wagoner, 2004).

Historically, an evolution of education in America demonstrates a movement from preparing individuals to live and operate in a democracy to a conceptual understanding of the importance of children acquiring a high level of education (Rubie-Davies, 2010). This concept emerged within the context of democracy for living productively in the 20th century (Dent, 2007). Therefore, the history of school scheduling demonstrates the importance of flexibility and the need for teachers to work cooperatively for the benefit of students. These needs affected scheduling choices (Spaulding, 1994). In the early 1800s teacher education was infrequent even though the requirement was that teachers had to have expertise in the subject areas they taught (McPherson, 2000). Teachers were free to teach any subject at any time of the day. In the late 1800s schools began to experiment with different scheduling formats.

A schedule promoted by the Carnegie Foundation for the Advancement of Teaching established the Carnegie unit, which required a 50-minute class period for each subject taught by a teacher specialist in the subject area. During this time in American education, the Carnegie unit influenced the scheduling format of the school (Urban & Wagoner, 2004). The Carnegie unit continues to influence much of teaching and learning in secondary schools, such as the length of the class period, the school day, the school

year, and the time needed to earn a valid secondary school diploma. The Carnegie unit also affects the organization of the curriculum, units of instruction, and assessment of learning. Therefore, the Carnegie unit discourages interdisciplinary teaching because of the need to decide how many units to attribute to each discipline (Zepeda & Mayers, 2006).

Other experiments, however, were not as successful. Trump (1958) influenced schools to experiment with ungraded instruction, long periods of independent study, and large-group instruction. Some schools adopted flexible modular scheduling, which broke the traditional seven-period school into 20-minute modules. However, this type of scheduling was abandoned because of large amounts of unstructured, independent study time, and problems with student discipline (Zepeda & Mayers, 2006).

In the 1970s, the open school concept emerged, based on the idea that flexible scheduling was beneficial to staff and students. Divisions between classrooms in elementary schools ceased and students could progress at their own speed, moving from one grade to the next. Some debate, however, occurred about the effectiveness of open schools. For example, in a survey of 6,225 students in 39 elementary and secondary schools, McPartland and Epstein (1977) found no negative effects of openness on student achievement regardless of duration of openness, within-school differences among subject areas, or consistency of student subgroup differences. In contrast, however, Raywid (1981) and Wright (1975) found negative effect because of inadequate blocks of time allocated to cover subjects. Therefore, open schools were also abandoned.

In the 1970s, flexibility was a continued priority, and schools adopted fluid block scheduling, which allots a block of two to three hours to teams of teachers from various

subject areas, allowing teachers to schedule instruction according to student needs. Another flexible scheduling alternative that began in the late 1980s, and continues in popularity, is the zero period schedule, in which courses begin an hour earlier than the regular school day, allowing some students to leave an hour earlier or enroll in an extra class (Canady & Rettig, 1995).

Scheduling models configure the time limit for student engagement in classes each day. Models of class schedules vary from the traditional classroom periods of 45-50 minutes each to block scheduling, and teaming ranging from 85-90 minutes to 145 minute blocks of time. The traditional 45- to 50-minute class period, used in secondary school and middle school schedules, meets the same hour each day. The advantages of this schedule are that students receive daily drill and practice for core courses each day. Students who are absent miss only a portion of each subject that they can make up without too much loss of time and content activities. Students also have ease of transferability to another school on a similar schedule. Disadvantages of traditional schedules are class periods too short for extended teaching activities such as science labs, not enough time to form quality relationships with teachers and with other students, discipline problems that arise during the frequent transition periods from one class to the next, and teachers having to provide instruction for large numbers of students each day (Queen, 2008).

Education Accountability in the United States

The *Elementary and Secondary Schools Act of 2001* (NCLB, 2002) was intended to provide children in Grades K-12 equal and fair educational opportunities in schools (Sunderman, 2008). The primary goal is "to ensure that all children have a fair, equal,

and significant opportunity to obtain a high-quality education, and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments" (NCLB, 2002, § 1001). Like previous state and federal programs, NCLB emphasizes accountability and gives school districts flexibility to determine how they will use their resources to improve student achievement.

NCLB (2002) mandated students to be proficient in reading and mathematics by 2014. Therefore, students in Grades 3-8 across the United States have to be tested each year in reading and math, and scores must be reported for public scrutiny. In schools in which students do not meet adequate yearly progress (AYP), school officials must develop plans for helping children to become proficient on state tests. Educators and some researchers (e.g., McCaslin et al., 2006; McClure, 2008) suggested that testing provisions be designed to hold state and local school districts accountable for improving student achievement.

The overall goal for the AYP requirement is to guarantee that students will be performing at levels of proficiency or better, as defined by states (Manna, 2004). Schools, school districts, and states must show that students across varied groups (e.g., socioeconomic, racial, etc.), including students with disabilities, are showing adequate progress toward proficiency (Manna, 2004). Thus, much of the language of NCLB about proficiency emphasizes the academic achievement of children and implies that underperforming at-risk students receive the tools and resources to improve their achievement.

Under NCLB (2002), states must define and demonstrate what constitutes AYP for public elementary and secondary schools. The definition must include the following

components: (a) a time line that ensures that students in each subgroup meet or exceed the state's proficient level of academic achievement no later than the 2013-2014 school year, (b) starting points using data from the 2001-2002 school year, and (c) intermediate goals that increase for each subgroup that must take effect no later than the 2004-2005 school year (Manna, 2004). In addition, each state must establish annual measurable goals that identify a minimum percentage of students who must meet or exceed the proficient level of academic achievement. These goals must be the same throughout the state for each school and each subgroup of students. Schools only make AYP if the school meets or exceeds the state's annual measurable goal with respect to students within each subgroup. At least 95% of the students in the school in each subgroup must take the test (Manna, 2004).

In addition to accountability, NCLB is also based on two other principles: research-based education and high quality teaching, and parental options for parents of children attending Title I schools. Research-based education, which is most relevant to the present study, emphasizes educational programs and practices whose effectiveness has been proven through scientific research (Manna, 2004).

The NCLB Act (2002) is landmark legislation in education reform, because it mandates improved student achievement (McDonnell, 2005). Thus, NCLB has had a significant effect on the public education system. By mandating that students meet AYP, NCLB is the most rigorous of standards-based strategies that have ever been enacted for reforming schools (Nagle, 2005). Accountability is a key component of NCLB. Under the mandates of NCLB, the state, each local school district, and each individual school is

accountable for the academic success of students. NCLB creates strong rewards and consequences based on students' performance (Sunderman, 2008).

According to the NCLB Act (2002) legislation, any school systems and public schools that do not meet AYP for two consecutive years are in needs improvement status. School officials must inform parents that the school is a "needs improvement" school. Parents of children in Title I schools have the option of transferring their children to a high performing school. The school must also devise a plan for improvement. If a school fails to make AYP for a third year, parents of children have the same transfer option. If a school fails to make AYP for four years, the same two conditions mentioned before remain, but severe sanctions follow, including state takeover (Sunderman, 2008).

These penalties can result in significant costs to the local school system. States fund schools based on the number of students who attend the school. If a student transfers to another school, the receiving school collects the state funds for that student, and the transferring school forfeits the funding for that student. School systems cannot afford to lose the state funding that accompanies each student. Administrators must continually evaluate methods of instruction to provide their students opportunities to ensure optimal academic achievement (Sunderman, 2008).

Supporters of NCLB believe that the focus on accountability, high standards, and testing will help narrow the achievement gap between disadvantaged and minority students and majority students. Others (McDonnell, 2005; Sunderman, 2008), however, have a different view, arguing that higher test scores do not always indicate gains in mastery of subject matter; rather, teachers may have taught subject matter geared to testing content.

Accountability and Block Scheduling

Secondary schools in the U.S. use two primary forms of scheduling for delivering instruction to students–block and traditional scheduling. In the last 20 years, block scheduling has been one of the fastest growing educational reform initiatives in public education (Lewis, Dugan, Winokur, & Cobb, 2005; Martin-Carreras, 2006). Decades before the enactment of NCLB, reform in public education in the United States began after the publication of *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education [NCEE], 1983). According to the report, "Our nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world" (NCCE, 1983, p. 3).

The report found that students in the United States spent less time in school and less time learning while they were in school than students in other industrialized countries (National Center for Education Statistics [NCES], 1995). *A Nation at Risk* (NCEE, 1983) provided specific recommendations for reform that fell into three basic themes: raise performance standards, measure results, and hold teachers and administrators accountable for student performance. As a result, the report prompted widespread reform (National Center for Education Statistics, 1995).

NCLB holds state departments of education and local school systems accountable for maximizing student performance as part of a national effort. Each state creates and implements measures for minimum levels of proficiency on annual tests and academic indicators and whether schools are meeting those levels of proficiency. Each school must make AYP. NCLB also requires each state to produce annual progress reports at state

and local levels. Public annual reports measure the AYP of every school (Sunderman, 2008).

Accountability challenges caused educators and policymakers to focus on multiple options that would result in improved student academic progress, which included alternative school-day structures. In the late 1980s, block scheduling became an alternative to traditional six- or seven-period schedules. Block scheduling was seen as a way to consolidate class time so that teachers could fully engage students in a wider variety of learning activities and be free of time constraints associated with the more traditional lecture methods of teaching (Canady & Rettig, 1995; National Commission on Time and Learning, 1994). This would, in turn, help students learn better (Canady & Rettig, 1995; Marshak, 1997; Queen, 2000).

Many standards-based instructional practices involve in-depth investigations, discussions, and reflections. Thus, extended class periods associated with block scheduling could act as a catalyst for standards-based teaching techniques, absent from the traditional school schedule (Flynn, Lawrenz, & Schultz, 2005). Flynn et al. (2005) provided additional data for school administrators to make decisions about school scheduling options relevant in considering the focus on school accountability and standards-based teaching practices. Flynn et al. used data originally collected as part of a large National Science Foundation Statewide Systemic Initiative (SSI) impact study (Lawrenz & Huffman, 2002). In the SSI study, schools from different states were representative of those having high and low amounts of contact with an SSI. Data in the SSI study were derived from surveys, interviews, and observations. Flynn et al. compared eighth-grade middle level mathematics student engagement in standards-based

instruction in block- and traditional-schedule schools. Engagement meant students involved in "minds-on" activities, or activities that "provide the stimulus for students to think about and construct their own ideas on particular concepts and procedures, their connections with other mathematical ideas, and their applications to real-world contexts" (p. 16).

Flynn et al. (2005) studied data from two of the instruments in SSI–the surveys for middle level principals and mathematics teachers. The principal survey asked about school enrollment, grade levels, percent of students eligible to receive free or reduced-price meals, and the percent of Caucasians at the school. The teacher survey assessed the level of standards-based mathematics instruction by asking teachers to indicate on a five-point Likert scale (1 = rarely or never; 5 = daily) how often their eighth-grade students engaged in 17 types of instructional activities. Teachers were also asked about the percentage of class time was spent on whole class instruction, small group instruction, and individual student work.

The data showed that teachers in both block and traditional settings rarely used community resources or had students prepare written reports. However, teachers in both settings consistently (one to three times a week) had students use calculators or computers, work on solving real-world problems, participate in discussions to deepen mathematics understanding, share problems in small groups, and evaluate their own work. Thus, in both settings, there were only moderate amounts of engagement in recommended instructional practices.

Some items showed differences between the block and traditional settings. Although some of these differences were small, 10 of the 17 items were responses of

teachers from the block-scheduled schools. Statistical analysis without controlling for socioeconomic status (SES) revealed significant differences on two items, "write reflections in a notebook or journal" and "use of calculators/computers to solve mathematics problems." A difference in only one item, "writes reflections in notebook or journal," when controlling for SES applied. The "use of calculators/computers to solve mathematics problems" item was insignificant when controlling for SES applied, suggesting that the use of calculators and computers related to SES more than type of school scheduling.

Based on the results of their study, Flynn et al. (2005) concluded: (a) although teachers in block schedules might increase the use of varied instructional activities, it does not necessarily follow that there would be significant differences between the instructional practices of teachers in block and traditional settings. The lack of significant differences between the teachers in block and traditional settings could increase nationwide emphasis on the implementation of standards-based mathematics instruction. Increased emphasis could result in teachers attempting to teach mathematics in the same ways. However, if these conclusions are accurate, they point to another issue, the overall low level of engagement in standards-based instructional practices in both settings, a troubling pattern in the teaching and learning of real-world, hands-on mathematics.

Nichols' (2005) survey of secondary school principals found that 11% of secondary schools in the United States had implemented some form of block scheduling by 1993. Nichols explored scheduling structures and their potential influence on student academic achievement and success in required English and language arts courses at five

secondary schools in a large urban school system in Indiana. Nichols focused on English and language arts rather than on other core subjects, because Indiana graduation requirements stipulate that four credits in English are necessary for graduation, whereas requirements for mathematics and science are less. Data derived from 1992 to 1999 before and after the implementation of block scheduling, which consisted of either a block 4 x 4 or block 8 scheduling format. Each secondary school had a unique student profile in terms of ethnicity, SES, and prior academic achievement.

Nichols (2005) hypothesized that in each school that had adopted block scheduling, student achievement in English and language arts (as measured by GPA) would not be affected by the conversion. Nichols computed GPAs for English and language arts courses and considered enrollment fluctuations in these courses for each year at each school when block scheduling began. Nichols' research questions asked, first if students' GPA in English and language arts courses increased significantly when schools adopted block scheduling structures. The second research question investigated whether GPAs for high- and low-income students differed after block-scheduling structures began. The third research question investigated whether GPAs of minority and majority students were different after block-scheduling structures were implemented.

Nichols (2005) found that while overall student GPAs in language arts courses increased slightly, the conversion to block scheduling at the participating secondary schools had no significant negative impact on language arts achievement. Nichols noted that the flexibility of block scheduling often allows students to enroll in elective courses, which may inflate overall GPAs. Nichols concluded that because block scheduling allows students to take more courses per year, students completed successfully their

required language arts courses and enrolled in additional courses beyond the courses required for graduation, thus increasing achievement.

The results suggested that students from low-income and ethnic minority backgrounds did not show significant academic gains in English achievement as a result of conversion to block scheduling; achievement for low-income and minority students remained consistently lower than achievement for higher income, ethnic majority students. The results also suggested that, in addition to block scheduling, other programs are needed to support academic achievement for low-income and ethnic minority student populations. Thus, Nichols (2005) found little evidence supporting the hypothesis that conversion to block scheduling would significantly affect student achievement in English and language arts.

An earlier study by Lawrence and McPherson (2000) showed different findings. This study compared the academic achievement of secondary school students on the block schedule with the academic achievement of secondary school students on the traditional schedule. The findings revealed that students on the traditional schedule scored significantly higher on Algebra 1, Biology, English I, and U.S. History end-of-course tests than students on the block schedule. The sample included secondary students from two secondary schools in the same school district in the Southeastern region of North Carolina.

One explanation that Lawrence and McPherson (2000) offered for the surprising results was that the study occurred in the years immediately following the transition from traditional scheduling to block scheduling, and teachers and students may not have had enough time to learn how to use the new scheduling format. In addition, Lawrence and

McPherson suggested that these results indicate instructional programs that meet the learning needs of students and prepare them to function in an increasingly changing technological society are critical needs. However, they surmised changes in the structure of the school day may not be the best long-term solution to improve student achievement.

A study by McCreary and Hausman (2001) might offer an explanation of the mixed results in the research about school day scheduling. These researchers examined achievement in schools with traditional scheduling, block scheduling, and trimester systems in a large urban school system consisting of 28,000 students. Data derived from the school district's database that was maintained from 1995-1996 through 1998-1999. The study tested for differences in student annual grade-point average (GPA) and scores on the Stanford Achievement Test (SAT), credits attempted and earned, and absentee rates.

McCreary and Hausman (2001) found that schools with traditional schedules tended to have higher average GPAs and less student absences than the other block scheduled schools and schools on trimester systems. Traditional schedules also showed the highest achievement in math. However, students on block and trimester schedules had higher science achievement on the same standardized tests. McCreary and Hausman pointed to previous research results that indicated that students have more positive attitudes toward their schooling under the alternative scheduling system. They concluded that the relationship between structural change and changes in student outcomes was weak. They further observed that educational leaders often make scheduling changes without also changing the learning environment of the school, such as curriculum, professional development, and school policies.

Part of changing the learning environment of the school involves teacher training about the use of block scheduling. According to Silva (2007), teachers must have the training needed and provided the strategies for using the extra time provided by block schedules to best know how to use effectively the extra time given to them and the students. The lack of consistency in teacher training and school reform relative to school scheduling changes may be another reason for the mixed results in the research on school scheduling and its effect on student achievement.

Lewis et al. (2005) studied the effect of block scheduling on secondary school student achievement in mathematics and reading in three secondary schools in a school district in northern Colorado. Specifically, Lewis et al. investigated the effects of 4 x 4 block scheduling, A/B block scheduling, and traditional scheduling on mathematics and reading achievement and whether the effects of different block scheduling formats vary by student gender and ethnicity relative to mathematics and reading achievement. Students who participated in the study met specific criteria. First, students attended one of four junior high schools during the 2000-2001 school year. Second, students completed a reading and mathematics leveled tests in the spring of 2001. Third, students attended one of the three secondary schools during the 2002-2003 school year. Fourth, students completed the reading and mathematics ACT Assessment in the spring of 2003. The final sample consisted of 355 students.

Student scores from ninth- and eleventh-grade standardized tests matched the junior high and secondary school attended. Outcome measures consisted of leveled tests and the ACT in mathematics and reading. Results reflected that students in 4 x 4 block scheduling had greater gain scores in reading and mathematics compared to students in

traditional scheduling and A/B block scheduling. According to Lewis et al. (2005), the results suggested that 4 x 4 block scheduling may be more advantageous to students for reading and mathematics achievement than traditional and A/B schedules. The researchers recommended that future research explore why 4 x 4 block scheduling shows greater gains in academic achievement for secondary school students and that researchers and practitioners should examine whether reading is a more appropriate content area for block scheduling than mathematics.

An Effective Form of Block Scheduling

Baker, Joireman, Clay, and Abbot (2006) sought to add to the existing data on secondary schedules and answer the overarching question relative to the most effective way to schedule in secondary schools. Baker et al. (2006) conducted a telephone survey of 296 teachers and administrators in Washington State and asked for a description of the school schedule. They classified the schedules into five categories: traditional seven-period, traditional six-period, 4 x 4 block, alternating (A/B) block, and modified block (both blocked and traditional periods). In addition, Baker et al. gathered data relative to the number of years the schedule was in place. If change occurred within the two-year period, Baker et al. asked the type of schedule in place previous to block scheduling. The researchers also investigated other details such as number of minutes per class period, measure of family income (eligibility for free or reduced priced meals), dropout rates, presence of an advisory period, and if there is an advisory period, how often they met and for how long.

Free or reduced lunch data showed differences in student achievement among the types of schedules when the schools reflected family income. Baker et al. (2006)

compared student achievement in reading, math, and writing on the Washington Assessment of Student Learning (WASL) to the different types of schedules. They found that the majority of schools (62.8% or 186) offered a traditional seven- or six-period day. The rest offered some variation of the block schedule. The 4 x 4 block and modified block were the most common types of created schedules offered and represented 42 (14.2%) and 47 (15.9%) of schools, respectively. A small percentage of schools, 21 (7.1%), offered an alternating (A/B) block.

Baker et al. (2006) examined the relationship between type of schedule and student achievement. Results of their study revealed that the seven-period and modified block schedules were, overall, the highest performing schedules correlated with reading, writing, and math WASL results. The 4 x 4 and A/B alternating block schedules were, overall, the lowest performing schedules correlated with reading, writing, and math WASL results. No statistical difference between the traditional seven-period day and modified block schedules applied. Both outperformed the other three schedules, and both were equivalent to each other. Baker et al. concluded that using a particular schedule in itself does not make a difference; the key factor to consider is whether the schedule serves the purpose and needs of the school.

Advantages and Disadvantages of Block Scheduling

Walker (2000) observed that approximately 40% of U.S. secondary schools were either using or considering some type of block scheduling. Research (e.g., Canady, 1990; Canady & Rettig, 1995; Maltese et al., 2007; Schroth & Dixon, 1995; Shortt & Thayer, 1999; West, 1996) has shown both positive and negative achievement results within

block schedules, resulting in mixed and inconclusive results about the relationship of block scheduling to student achievement.

Advantages of Block Scheduling

Proponents of block scheduling argued that the longer class periods encourage greater student engagement and a deeper level of study and that increased class time reduces discipline problems that arise between class periods. Canady and Rettig (1995) and Shortt and Thayer (1999) indicated that implementing an appropriate schedule can address many discipline problems. Fewer discipline problems result from the decreased number of class changes each day (Guskey & Kifer, 1995). Carroll (1994) emphasized the importance of block scheduling in improving teacher-student relationships. Irschmer (1996) asserted that block scheduling gives teachers and students more time to plan for instruction and learning. Shortt and Thayer (1999) also implied that when class periods are longer teachers can use more of a variety of instructional techniques that meet individual student learning needs.

West (1996) described how block scheduling was implemented at Chaparral High School, in Las Vegas, Nevada, and changed from a traditional six-period day to an alternating A/B block schedule. West also investigated the effects of block scheduling on attendance rates, school atmosphere, and student achievement. The new format included six steps: create awareness, base outcomes on adult roles and skills needed to compete in the job market, identify the necessary skills, knowledge, and behaviors for success; identify negotiable and nonnegotiable items, develop a plan, and implement the reform. Under the new schedule, students received the same amount of instruction as they did in the traditional schedule. A survey was administered to students, parents, and staff after

the first year of implementation. Fifty-six percent (n = 2600) rated their experience in the block scheduling format as positive, and 90% of faculty supported the new format. West (1996) found that achievement rates did not decrease, attendance usually increased, and stress levels decreased as a result of implementing the block schedule. West also reported a stronger emphasis on critical thinking problems, an improvement in the school-to-work program, and a higher level of success for special education students in mainstreamed classes.

Mattox, Hancock, and Queen (2005) explored the effect of block scheduling on the mathematics scores of sixth-grade students (n = 8,737) in five middle schools (designated as Schools A, B, C, D, and E) in a school district in the southeastern United States. Traditional schedules were in place for the first three of the six academic years studied. These schedules consisted of 50- to 55-minute class periods, complete reshuffling of students each period, and assignment of students to classes with other students of similar academic ability. A typical school day for students consisted of attending six to seven classes taught by six to seven different teachers.

Block scheduling (e.g., 4 x 4, alternate day, or fan block) was used in the last three to six academic years studied. In the 4 x 4 schedule classes were 90 minutes. Alternate day classes were 90 minutes on alternating days. Fan block classes met either every day or every other day and in combination for shorter and more extended blocks of time. At the end of each academic year students' achievement was assessed by state-mandated standardized mathematics tests. In Schools A, C, D, and E, no significant differences, as compared to the schools' 1996-1997 mean achievement scores, were shown in the first year of transition to block scheduling (1997-1998).

During school years 1998-1999 and 1999-2000, a significant gain in mathematics achievement was shown. For School B, significant gains in mathematics achievement was shown for 3 of the 10 school years. Based on the results, Mattox et al. (2005) concluded that block scheduling allows students to broaden their selection of courses and take more electives than under a traditional scheduling format. Block scheduling allows longer class periods, which, in turn, allows more time for interactive instruction using a variety of teaching strategies. Students are less likely to display disruptive or negative behaviors in a block scheduling format compared to a traditional format. Block scheduling permits a more individualized approach to teaching that meets the specific learning needs of students. Block scheduling allows teachers more time to plan and prepare lessons.

Supporters of block scheduling believe the extended time allows teachers to more thoroughly teach the curriculum and spend less time beginning classes and settling students in. Thus, teachers perceived improved school climate as another advantage of block scheduling. Students settled in class and fewer behavior problems occurred (Anfara, 2001; Evans, Tokarczyk, Rice, & McCray, 2002; Jackson & Davis, 2000; McCoy & Taylor, 2000). Queen (2008) believed that discipline improved because of the decreased number of class transitions in block scheduling.

Disadvantages of Block Scheduling

Opponents of block scheduling claimed that this alternative scheduling format was implemented without substantial research to prove its benefits. For example, Schroth and Dixon (1995) completed a case study of seventh-grade mathematics students in two Texas middle schools. School 1 had 296 students in seventh grade and used a traditional

schedule of 50 minutes per class period. School 2 had 395 seventh graders and used an A/B block for higher achievers and 90 minutes a day, 5 days a week, for lower achievers.

They compared math scores on the Texas Assessment of Academic Skills (TAAS) and found no significant difference in the average scores of the two groups. The mean score of School 1 increased from 62% to 65% from 1994 to 1995, and School 2 increased from 61% to 63%. Mean scores for School 1 was 83% in 1994 and 82% in 1995 among higher achieving students. Scores of the higher achievers in School 2 remained relatively unchanged, dropping from a mean of 85 in 1994 to 84.5 in 1995. Schroth and Dixon (1995) concluded that student test scores did not offer conclusive evidence of a relationship between scheduling format and improved student achievement.

Maltese et al. (2007) used a national survey of more than 7,000 students from 128 different college introductory science courses to compare the experiences of students in secondary science classes in block and traditional scheduling formats. Specifically, Maltese et al. investigated whether students who participated in a block schedule science class reported instructional practices at different frequencies than students in traditional classes and whether performance in introductory college science courses is associated with students' reported participation in secondary school scheduling plans. Three different scheduling plans were included: A/B block plans, traditional scheduling plans, and 4 x 4 block plans.

Maltese et al. (2007) conducted a survey based on data collected from Project Factors Influencing College Science Success (Project FICSS) to conduct the study. Project FICSS surveyed college students in 128 different first semester introductory college biology, chemistry, and physics courses in 55 four-year colleges and universities

in 33 states during the fall semesters of 2002 and 2003. Faculty was asked to participate in the survey and 29 biology departments, 31 chemistry departments, and 37 physics departments agreed. The sample totaled 2,754 biology surveys, 3,521 chemistry surveys, and 1,903 physics surveys.

This was the only course type included in Maltese et al.'s (2007) investigation because introductory science studies are most likely to experience large lecture classes with smaller tutorial sections and separate laboratory sessions. Maltese et al.'s survey questions focused on students' backgrounds, secondary school experiences, and test scores. The sample included students from 50 states, Washington, DC and Puerto Rico, with 27 states each having 50 or more respondents. Surveys were administered during class meetings and professors entered the students' final course grades on the surveys before returning them to the researchers.

The results indicated that 4,160 respondents reported participating in traditional scheduling plans; 1,672 reported 4 x 4 block plans; and 1,513 respondents reported A/B block plans while in secondary school. To determine whether students who participated in a block schedule science class reported instructional practices at different frequencies than students in traditional classes, Maltese et al. (2007) examined variations in teaching methods across different scheduling plans and compared the frequencies of instructional practices in secondary school science. Frequencies included (a) number of labs per month, (b) number of demonstrations per week, (c) frequency of lectures, (d) whole class discussions, (e) small group activities, (f) individual work and peer tutoring; and (g) time spent in class on preparing for standardized exams. The frequencies of teaching methods

reported by students in traditional and both block scheduling plans had slight variations but were overall similar.

To determine the connection between secondary school scheduling formats and performance in college courses, Maltese et al. (2007) compared differences in predicted college grades for prototypical students with a range of secondary science grades across the three scheduling plans. The researchers found similar trends for traditional and 4 x 4 block plans, trends, with 4 x 4 block plan participants associated with grades incrementally lower than traditional plan students. Higher achieving A/B block students showed slightly higher college science grades than students in other scheduling formats. Overall, however, variations in predicted college grades were minor. Maltese et al. concluded that there were no meaningful differences in performance in college science courses among students from different scheduling formats.

Maltese et al. (2007) also analyzed the interactions between the frequencies of the instructional methodologies discussed previously and the three scheduling formats. Of the instructional practices analyzed, only one, peer tutoring, showed a statistically significant outcome. No significant outcomes for the other instructional methodologies occurred; thus, there was no associated difference in performance in college science courses. The results of this study raise questions about whether block scheduling has an instructional advantage.

Opponents of block scheduling argue that extending class time does not guarantee that teachers will use diverse teaching methods (Canady & Rettig, 1996). In block scheduling teachers must hold students' attention for longer periods. This means frequently changing learning activities. When teachers move from the traditional

schedule to the block schedule, they tend to need adequate preparation; therefore, they may use the same methods as they did in traditional scheduling, only for a longer period of time (Dexter, Tai, & Sadler, 2006; Queen, 2008; Veal & Flinders, 2001).

Mixed Results Studies of Block Scheduling

A study of block scheduling after the first year of implementation, conducted in Wake County (North Carolina) provided mixed results. The school district implemented the change to block scheduling in 2003-2004, for the following reasons: Educators in the district saw the need to increase opportunities to enroll in advanced courses and participate in more elective courses. New requirements for a diploma in North Carolina created challenges, and school administrators wanted to develop smaller learning communities in their schools. The researchers who conducted the study reported that more than 90% of teachers received some training on implementing the block schedule. The training emphasized diverse instructional strategies. Sixty-five percent of the staff found the change to block scheduling positive, and 58% of teachers agreed that the pacing guides were helpful. Nonetheless, the majority of teachers (63%) still favored discussion and lecturing (55%) as instructional methods (Reichstetter & Baenan, 2005).

During the first year of implementation, teachers' views about whether the block schedule allowed them to improve instruction and relationships with students varied. Fifty-six percent of teachers said the block schedule allowed the use of more diverse teaching methods. Fifty percent said the block schedule allowed them to cover concepts in the same depth as with the traditional schedule; however, 64% believed that there was no improvement in discipline in their classrooms. The report acknowledged that pacing, the need for more planning time, teachers' need for more instructional methods,

difficulties created in the teacher-student interrelationship created by time constraints continued to be challenges of the block schedule format (Reichstetter & Baenan, 2005).

Wronkovich et al. (1997) investigated block scheduling versus traditional scheduling over a three-year period in two suburban secondary schools in Ohio, Coventry Local Schools, and Manchester Local Schools. Coventry used an intensified semester-long block while Manchester used the traditional year-long structure. Wronkovich et al. compared Ohio Colleges Early Math Placement (EMPT) scores at the end of the students' junior year to determine retention levels in Algebra I, Geometry, and Algebra II. They found that students who participated in the block-scheduled classes chose to do so and reported that classes were more enjoyable; however, these students scored lower on the EMPT. They concluded that the traditional schedule for mathematics was more effective. Overall, participants' attitudes toward the block schedule remained positive, while students in other traditional classes opposed attending longer classes. Wronkovich et al. recommended that more research be conducted to further validate conclusions about block scheduling and student achievement.

Trenta and Newman (2002) observed that the result of studies and evaluations of block scheduling and its relationship to student achievement differed with some studies showing evidence of improved student achievement while others found no significant improvement or a significant decline in achievement. Student achievement data must be more fully analyzed to determine if block scheduling positively affects student achievement.

Teacher Perceptions

Definitions of perception included in the literature derived from physical, psychological, and physiological perspectives (Auwarter & Aruguete, 2008). Perception defined from a cognitive perspective, Eggen and Kauchak (2001) explained how individuals attach meaning to experiences. Allport's (1996) definition of perception includes elements about the way individuals judge or evaluate others with whom they are familiar. Perception is important, because it influences the information that enters one's working memory and influences background knowledge (Goldstein, 2009). Research supports claims that background knowledge in the form of schemas from an individual's experience affects perception and subsequent learning (Friedman & Waggoner; 2010; Goldstein).

Teachers' beliefs, practices, and attitudes closely relate to how teachers cope with challenges in their daily professional lives. Teachers hold beliefs about teaching and learning and have perceptions of the students they teach. Thus, it is important to understand teachers' beliefs, practices, and attitudes to improve educational processes. Teachers' beliefs, practices, and attitudes influence students' learning environments, student motivation, and achievement. Thus, good instructional practices reflect the knowledge, concepts, and skills teachers bring to the classroom (Campbell et al., 2004; Hardre et al., 2008).

Researchers (e.g., Auwarter & Aruguete, 2008; Fuchs, 2008; Hardre, 2008) have studied how teachers' beliefs about students affect their behavior toward students. Both teacher beliefs about learning and perceptions about students translate into classroom instructional practice. These practices, in turn, influence how students learn and achieve.

Students have differing needs for the amounts and kinds of teacher assistance and attention. Thus, teachers who apply principles of differentiated instruction toward students who grasp the subject matter at varying levels are acting appropriately and productively (Pass, 2007).

Rubie-Davies (2001) pointed out, however, that some differential instructional practices may widen the gap between low- and high-achieving students. For example, teachers might give the more motivated students more opportunities to learn by frequently giving cues or calling on them. This results in less learning for other students given fewer such opportunities. Such practices may also indirectly influence student learning indirectly by affecting students' own beliefs about their competencies and their expectations for achievement.

Studies have confirmed that teachers' beliefs and attitudes are generally congruent with their instructional practices. Pass (2007) studied the perceptions teachers had of their instructional practices and found that teachers perceived and believed in a one-size-fits-all approach to teaching the state-mandated content in an English class with a diverse population rather than adopting a differentiated curriculum to fit needs of individual students. Eberle (2003) investigated the relationship between teachers' beliefs on their content with their classroom practice and confirmed a positive correlation between these two variables. Eberle also concluded that the teaching practices depend on the teacher's ability to organize the science concept and the curriculum.

Pass (2007) and Eberle (2003) focused on teacher perceptions of instructional practices. Cadwalader (2008) sought to determine the validity and correctness of teacher perceptions. Cadwalader studied the level of teachers' ability to identify students'

strengths and weaknesses to understand their learning needs. The results revealed that teachers were less than 50% accurate in their judgment of students' two strongest and two weakest intelligences.

Research on beliefs (e.g., Rubie-Davies, 2010; Wilcox-Herzog, 2002) indicates that teachers' beliefs precede educational change. Therefore, teachers lead the way to educational reform and serve as important agents for change. Teachers, like their students, come to the classroom with a set of beliefs, attitudes, and perceptions through years of personal experience and that comes from their experiences as members of families, communities, and cultures (Campbell et al., 2004; Hardre et al., 2008).

Teachers' beliefs, attitudes, and perceptions are part of a personal belief system that comes from prior personal experiences, experiences with diverse students, teachers' role definitions, and knowledge of appropriate teaching strategies that, in turn, influence their expectations of their students. These beliefs, attitudes, perceptions, and expectations interact with one another and may influence teachers' planning and delivery of instruction, which also influences student achievement (Pajares & Urdan, 2005).

On the basis of this assumption, researchers such as Pajares (1992, 1996) suggested that more detailed studies are needed to discover how teachers' beliefs influence the process of instruction. Hardre et al. (2008) noted that to understand why teachers make the instructional decisions that they do, research methods should include interviews of teachers and observations of daily lessons, teaching practices in the classroom, and interactions with students. Examining teachers' in-depth beliefs and practices can provide a framework for understanding how teacher beliefs, attitudes, and perceptions about students affect instructional strategies, beliefs, and perceptions that

particular teachers hold about their students' abilities to achieve. The expectations teachers have for their students' academic futures, factors that influence teachers' instructional practices, and whether or not teachers implement best instructional practices in the classroom.

The focus of the present study is on teachers' perceptions of block scheduling and advantages and disadvantages of block scheduling in particular. A deeper insight and understanding about teachers' beliefs and perceptions of block scheduling and its influence on instruction and student achievement can provide greater insight into how teachers believe that block scheduling enhances the learning experience.

Teachers' and Administrators' Perceptions of Change

In theory, numerous reform efforts have called for educational change, with solicitation of teacher input and principals facilitating rather than directing activities, especially those oriented toward student achievement. In practice, however, this often does not occur (Fullan, 2006). Some researchers asserted that reform efforts seldom address the core issues of teaching and learning. For instance, Griffin (1995) noted that teaching is a culture in isolation, in which practitioners use their own professional judgment to make key instructional decisions in the privacy of their classrooms.

Teachers interviewed in his study believed their own methods were effective and took a *live and let live* attitude toward the practices of colleagues. Griffin (1995) found that, while teachers were enthusiastic about addressing school-wide issues such as curriculum, they seldom examined daily classroom practices. The reasons for this may related to the overall culture of schools; however, keeping discussions of change and reform productive and on track is difficult. Some schools have had more positive results

by outlining and presenting the school's mission and vision for the future (Fullan, 2006; Heck & Hallinger, 2009).

Weiss (1993) noted that schools sometimes undertook significant reforms but that such reforms were initiated top-down. They were the ideas of the principal, and teachers opposed the changes. Weiss suggested that teachers' resistance is justified, because experience leads them to understand that they receive little support for many of the ideals they learned in education school that they were expected to translate into practice. Kearney and Smith (2009) found that teachers may resist change because of a belief that their ideas or behaviors have no effect on the education of their students. Administrators must recognize that teachers have the ability to make key decisions to affect student achievement (Heck & Hallinger, 2009; Kearney & Smith, 2009).

Further, teachers need to believe in their own competence and ensure that the educational system can support their roles (Edgoose, 2010; Margolis & Nagel, 2006). Heck and Hallinger (2009) also found that teachers want to be involved in the restructuring of education and that the positive attitudes of teachers are attributed to the level of support teachers believe they have from administrators, a collegial faculty, and a major focus on students.

A tendency exists for teachers and administrators to approach change and new ideas with old assumptions. For example, in a study of shared decision-making (SDM), an educational reform initiative of the 1990s, Spaulding (1994) examined one principal who, by his own admission, was ostensibly promoting SDM. In actuality, however, the principal was manipulating the decision-making process in the direction he desired by planting ideas, pressuring opponents, and showing favoritism to supporters.

Fullan (2006) revealed another reform dilemma from the standpoint of administrative support for reform. If top administrators do not play an active, visible role in change initiatives, teachers may not take them seriously; however, if administrators are too visible, teachers may believe that administrators are wholly in charge and that teachers' voices do not count. It is important that teachers perceive that administrators respect their views so that they have the power to facilitate change. When teachers have opportunities to collaborate with administrators, decisions are more likely to be supported (Fullan, 2006).

Research shows that educational change and change initiatives are not easy, and teachers must prepare for a long-term process that requires commitment and training. There may be several difficult years before teachers and administrators learn to work with new approaches (Fullan, 2006). Enacting educational change requires identifying the conditions that support an environment that encourages teacher decision making and creative risk taking. Teachers and creative risk takers understand that they control some dimensions of context and process and that they should take responsibility for their actions (Margolis & Nagel, 2006).

Creative risk taking occurs in an organization in which people experience a caring atmosphere. Administrators contribute to this sense of caring by fostering an environment that encourages teachers and other staff members to share, support, and collaborate. When teachers know the decision-making process and which decisions represent shared ideas, they become more skilled at meeting, planning, and problem solving (Fullan, 2006).

According to several studies, many of today's educators perceive themselves as powerless and helpless (Brooks, Hughes, & Brooks, 2008; Edgoose, 2010; Margolis & Nagle, 2006). Effective educational change occurs when teachers perceive that they have a prominent role in decision making about how to best educate students and help students learn. If the teachers perceive that they cannot make a difference, either personally or within the educational system, meaningful change cannot occur.

Teachers' and Administrators' Perceptions of Block Scheduling

In a review of 58 empirical studies on block scheduling, Zepeda and Mayers (2006) found 14 studies that specifically examined teachers' perceptions of block scheduling, resulting in mixed findings. For example, Baker and Bowman (2000) found that communication with students was the issue most frequently mentioned by teachers as the greatest difficulty encountered with block scheduling. Benton-Kupper (1999) found that time usage was one of the key issues administrators faced in planning and implementing block scheduling, regardless of the content area, because time determined class schedules, shaped the curriculum, influenced teaching, and facilitated the interactions of teachers and students.

Jenkins et al. (2002) found that despite the popularity of the block, research findings were mixed in regard to achievement test comparisons. In a study of the advantages and disadvantages of block scheduling, Staunton (1997) compared the perceptions of more experienced teachers with the perceptions of less experienced teachers and found that teachers with more years of teaching experience with block scheduling had more positive perceptions of block scheduling than teachers with fewer years of experience. Baker and Bowman (2000) examined the relationship between

teachers' years of experience and their perceptions of block scheduling in general and its effects on agriculture education programs using a 30-item, five-point Likert scale instrument.

Benton-Kupper (1999) investigated the experiences of three secondary school English teachers during their second year on a block schedule in a case study design. Jenkins et al. (2002) used chi-square analysis to compare instructional practices of block teachers with those of traditional scheduled teachers (n = 2,167). Staunton (1997) also used a five-point scale survey to learn how block scheduling affected teachers' instructional practices. Wilson and Stokes (1999a, 1999b) conducted two studies of teachers' perceptions of block scheduling, both of which used a multiple group design and ANOVA analysis.

Studies by Methodology

Findings from Hurley's (1997) study of the effects of block scheduling on student achievement revealed no statistically significant difference in grade-point averages or in scores on the writing portion of the Georgia High School Graduation Test (GHSGT) between the two groups. However, statistically significant differences were found for language arts, mathematics, social studies, and science scores. For each of the statistically significant differences, students who received instruction via a traditional schedule received the higher GHSGT scores. Zepeda and Mayers' (2006) case study of the effectiveness of secondary school block scheduling in an urban school system was examined by considering whether the change resulted in an increase in test scores on several measures such as the Scholastic Aptitude Test (SAT), Advanced Placement (AP) Tests, and state-mandated graduation examinations. Ten years of data were gathered

from the public report card on the state website. In the school system under investigation, student scores on quantitative and verbal Scholastic Aptitude Test (SAT) showed a significant upward trend over 10 years. Over the same 10 years, Advanced Placement (AP) Test passing rates showed an upward development. An upward trend was also found for student scores on the state-mandated graduation examinations in all four subject areas: mathematics, language arts, science, and social studies.

A study by Bryant and Claxton (1996) investigated the perceptions of physical educators about block scheduling. Findings showed that a majority of physical educators in the state of Utah perceived an improvement in many aspects of teaching with the use of any block scheduling formats. Findings also indicated that block scheduling was providing more time for students to learn and be active. Bugaj (1999) found that administrators supported block scheduling more than teachers did, and teachers supported block scheduling over the traditional schedule. Moore, Kirby, and Becton (1997) found that teachers' attitudes regarding classroom instruction indicated student interest and discipline were challenges that became more apparent to teachers who were on block scheduling for some time. Veal and Schreiber (1999) examined the effects of a tri-schedule on the academic achievement of students in secondary school. The tri-schedule consisted of traditional, 4 x 4 block, and hybrid schedules running at the same time in the same secondary school. Effectiveness of the schedules was determined from the state-mandated test of basic skills in reading, language, and mathematics. Students who were in a particular schedule their freshman year were tested using the schedule types as independent variables and cognitive skills index and GPA as covariates. For reading and language, there was no statistically significant difference in test results. A statistical

difference in mathematics-computation was found, which suggested that block mathematics was an ideal format for obtaining more credits in mathematics, but did little for mathematics achievement and conceptual understanding.

The focus of Bryant and Claxton's (1996) study was the effects of block scheduling on physical education instruction. The researchers used a multiple-choice response (increased, decreased, no change) instrument that included one open-ended item. Bugaj (1999) surveyed teachers about the effects of block scheduling on teachers' practices in the areas of teaching strategies, assessment of student learning, and the use of homework. A Likert scale survey, interviews, classroom observations, and artifact collection were the sources of data.

Moore et al. (1997) used a 28-item Likert scale questionnaire with unspecified qualitative methods to study the effects of block scheduling on agriculture teachers' practices and Future Farmers of America programs. Veal and Flinders (2001) studied the effects of block scheduling on teaching practices at a large Midwestern secondary school and gathered data from a five-point Likert-scaled item questionnaire, classroom observations, interviews, and artifact collection.

Rickard and Banville (2005) investigated physical education teachers' perceptions of their experience. Physical education teachers participated in semi-structured one-on-one interviews in which they were asked to compare their perceptions of a change in scheduling formats from traditional to block scheduling. Changes were relative to their planning and teaching practices, student responses, change in student learning, changes in student discipline and management issues, student absences, and preferences to one format compared to the other.

Teachers reported several changes in their A/B class formats. They reported that class transitions included the sequential parts of a brief warm-up session, a 20-30 minute fitness component, instruction focusing on skills, and a final culminating activity. While some teachers stated that teaching had not changed much in the block scheduling format compared to the traditional format and that the additional time allowed by the block format was often wasted, 66% of teachers perceived that students learned more in blocked versus traditional classes. However, their perception was anecdotal as they had no documented evidence for such a conclusion.

Teacher perceptions indicated lower stress levels for themselves and their students and a decrease in student absenteeism, tardiness, and discipline problems after changing to a block scheduling format from a traditional format. Teachers also perceived that an additional benefit of block scheduling was having the flexibility to add new activities to their curriculum that require travel or extended time for set-up. They also perceived that less time was spent in class routine, which permitted more time for unhurried instruction and activity (Rikard & Banville, 2005).

Studies by Population Sizes and Subject Areas

In addition to reviewing studies of teachers' perceptions of block scheduling from a methodological perspective, Zepeda and Mayers (2006) also examined various population sizes and subject areas. Population sizes from as small as three (Benton-Kupper, 1999) to as large as 2,167 (Jenkins et al., 2002). According to Zepeda and Mayers, such a range of population sizes provides a broad view of teachers across different school sites working in block schedules and insights into individual classrooms.

Zepeda and Mayers' (2006) case study of the effectiveness of secondary school block scheduling in an urban school system examined whether the change resulted in an increase in test scores on several measures such as the Scholastic Aptitude Test (SAT), Advanced Placement (AP) Tests, and state-mandated secondary school graduation examinations. Ten years of data were gathered from the public report card on the state website. In the school system under investigation, student scores on quantitative and verbal Scholastic Aptitude Test (SAT) showed a significant upward trend over 10 years. Over the same 10 years, Advanced Placement (AP) Test passing rates showed an upward development. An upward trend was also found for student scores on the state-mandated secondary school graduation examinations in all four subject areas: mathematics, language arts, science, and social studies. The authors suggested school systems should consider the impact of block scheduling on student achievement measures noting that most of these studies gave no specific indication of the types of sites at which they were located.

Results of Teacher Perception Studies

Zepeda and Mayers (2006) found mixed results regarding teachers' perceptions in these 14 studies. In Bryant and Claxton's (1996) study, participants indicated that block scheduling enabled them to spend more time on many of their instructional objectives and to experiment with different teaching strategies to present those objectives. Other advantages of block scheduling reported by teacher participants included decreased absenteeism rates (Bryant & Claxton, 1996), fewer class preparations (Hurley, 1997), and decreased student anxiety (Veal & Flinders, 2001). In Staunton's (1997) study,

participants reported that extended class periods allowed them to experiment with new teaching strategies, increase interactions with students, and reduce stress.

The results of other studies (Baker & Bowman, 2000; Veal & Flinders, 2001) showed that teachers learned new teaching strategies. However, Jenkins et al. (2002) reported different results in their study of 2,167 North Carolina teachers and found little difference between the instructional strategies used by block teachers and those used by traditionally scheduled teachers and little difference in perceptions between the two groups of teachers about which teaching strategies were most appropriate. Teachers in the Jenkins et al. study believed that the selection of teaching strategies depended more on the learners and on the degree of staff development available to them than to the type of block schedule used.

Moore et al. (1997), in which North Carolina agriculture teachers reported that block scheduling did not have any significant impact on their instruction, supported these beliefs. However, the 92 Kentucky agriculture teachers who participated in the Baker and Bowman (2000) study believed that block scheduling had a positive impact on their teaching strategies. Jenkins et al. (2002) stated that education goes beyond the basic question of whether to implement a block schedule or continue with the traditional schedule. The more important issues are determining how to obtain the benefits of additional instructional time and how to prepare teachers for effective delivery of classroom instruction regardless of the model. On a broader level, the culture of the school districts must reward teachers for change so that teachers will make informed decisions concerning their instructional delivery (Zepeda & Mayers, 2006).

Bottge et al.'s (2003) study focused on teachers who taught students with disabilities. Bottge et al. surveyed teachers in 24 schools in the Midwest that had both block and traditional scheduling about the amount of time spent in various instructional activities, their satisfaction with their school schedule, their confidence in teaching students with disabilities, and the extent to which they collaborated with one another. The results of this study showed that teachers in block scheduled formats spent more time working with students in small groups and with individual students than lecturing. However, there were no significant differences in collaboration between block and traditionally scheduled teachers, although block scheduled teachers viewed collaboration as more valuable than traditionally scheduled teachers did. Bottge et al. concluded that moving from a traditional schedule to block schedule does not always mean that teachers will modify their instructional methods.

Discrepancies found in the research focused on the relationship of teacher experience to teacher perceptions. Wilson and Stokes (1999a, 1999b) explored the overall effectiveness of block schedules as perceived by first- and second-year teachers in four schools. Two of the schools implemented block for one and a half years and the other two schools implemented block for only one semester. Five areas served as a basis of comparison of block scheduling to traditional scheduling: support of block scheduling, perceptions on increased teacher effectiveness, perceptions on increased on-task time, improved school atmosphere, and improved attitude toward school. No significant differences occurred among the four schools on any of the five related areas when comparing teachers' perceptions of block scheduling to traditional scheduling. Wilson

and Stokes also found no significant relationship between teachers' years of experience and their beliefs about block scheduling.

Contrarily, Staunton (1997) found that teachers with four or more years' experience had more positive perceptions of block scheduling than their less experienced colleagues. Baker and Bowman's (2000) study found the opposite. In their study, teachers with less experience were more likely to perceive block scheduling positively than more experienced teachers (Baker & Bowman).

Biesinger et al. (2008) conducted a mixed-method study of the effects of block scheduling on student self-efficacy, attitude, and instructional practices in mathematics in a large urban school district in the southwestern United States. In response to Zepeda and Mayer's (2006) criticisms that studies of students' and teachers' perceptions of block scheduling omit reasons for positive perceptions, Biesinger et al. included formal focus group interviews in the study to allow students to further explain their perceived strengths and weaknesses of block scheduling. Three treatment schools and one comparison school participated in the study. The four schools had diverse student populations. The ethnicity of students at the schools ranged from 52% to 82% minority and total enrollment for each school ranged from 2,379 to 3,198 students. To maximize validity, similar courses from each school provided data. To obtain a clearer picture of the effects of block scheduling on changes in student beliefs and attitudes, students in the tenth grade were preferred participants, because most of these students were new to block scheduling.

Participants included 242 students in the study. Participants were administered a revised version of the Fennema-Sherman Attitude Scale (Fennema & Sherman, 1976)

pre- and post-test to assess changes in attitudes toward mathematics. Biesinger et al. (2008) developed a 12-item Likert scaled mathematics self-efficacy survey that was also administered pre and post to participants. Four students selected at random per course level at each school (a total of 12 from each school) participated in focus group interviews. Classroom observations in a random sample of 9 of the 22 classrooms occurred, with a revised version of a formal classroom observation instrument. Data were analyzed using paired-samples *t* tests, repeated measures ANOVAs, and chi-square. Student comments in the focus group interviews applied open coding in six categories: class activities, connections with teachers, attitude toward the block schedule, balance of schedule, student attitude toward learning mathematics in a block schedule, and learning. The data analysis indicated that implementing the alternating block schedule model in the three treatment secondary schools resulted in significant changes in student attitude for learning mathematics.

While this study focused chiefly on student perceptions of block scheduling, implications can be drawn for teacher perceptions. In the classroom observations, Biesinger et al. (2008) found a need for professional development for teachers on how to use effectively the additional time provided in a block schedule. Observations showed that little change occurred in the number and type of teacher-initiated activities and strategies over the course of the school year. The focus group results suggested that, although students were in favor of it, most of their reasons were external to daily activities conducted within the classroom (e.g., ability to take more electives, having two days to complete homework assignments, etc.). These results suggested that teachers might not have perceived block scheduling as positively as the students did.

Lare, Jablonski, and Salvaterra (2002) suggested that teachers determined if improved student achievement resulted from block scheduling. Lare et al. (2002) used a case study approach to examine teacher perceptions of block scheduling in a Pennsylvania school. One hundred teachers participated. Lare et al. administered a 20-item Likert-type survey that asked questions about teaching strategies and perceptions of block scheduling and included four open-ended items about improvements needed in the current schedule. Lare et al. also used collected data from focus groups, interviews, class observations, and archival information. The results showed positive reactions from both teachers and students. Teachers believed that they could get to know students better and develop a stronger rapport by helping them during planning and by having more preparation time for classes. As teachers came to know their students, they could better identify their learning styles and incorporate instructional strategies geared to their learning styles, leading to better performance in class (Lare at al., 2002).

Aguilar, Morocco, Parker, and Zigmond (2006) also focused on students with disabilities. Aguilar et al. (2006) used a case study of two students with learning disabilities and analyzed 55 transcripts of recent graduates to obtain a profile of the academic and social opportunities and supports in place that made the school studied a good secondary school. The study took place at a secondary school in Washington, DC with an enrollment of 1,970 students.

Distinctive characteristics of the school included an open enrollment policy for courses, inclusion of students with learning disabilities in general education classrooms; block scheduling, and team teaching in English, mathematics, science, and social studies. The school had 4 x 4 block scheduling with four 90-minute classes scheduled each day,

two in the morning and two in the afternoon. The longer class periods allowed students to study important concepts and ideas more in-depth and provided opportunities for students and teachers to engage in meaningful learning experiences. On the survey, the majority of students (89%) perceived the school as academically strong, 93% believed they could get extra help whenever needed, 75% believed that teachers encouraged working together in class, and 68% believed coursework requires them to "think, not memorize" (Aguilar et al., 2006, p. 161).

Students with individual education plans (IEPs) showed significantly higher ratings than students without disabilities on two survey items that had to do with individualized relationships with adults: "teachers show respect" and "teachers show caring" and "school is NOT boring" (Aguilar et al., 2006, p. 161). While not stated or explored directly, the implication was that block scheduling is well-perceived both by students and teachers because of the intense learning and positive student-teacher relationships that can accrue as a result of block scheduling.

The purpose of Dexter et al.'s (2006) study was to investigate instructional practices at the secondary level as well as the impact at the collegiate level. First, the researchers investigated whether students who participated in a block science class reported instructional practices at frequencies different from students in traditional classes. Second, the researchers examined the relationships between secondary school scheduling plans and college science preparation using introductory college science grades as the outcome measure. The authors used data from the Factors Influencing College Science Success (Project FICSS), a four-year study funded through the Interagency Educational Research Initiative and the National Science Foundation (NSF-

REC 0115649), which surveyed 7,000 students in 128 different first semester introductory college biology, chemistry, and physics courses taught at 55 four-year United States colleges and universities (36 public and 19 private) from 33 different states during the fall 2002 and 2003 semesters. Data were analyzed using descriptive analysis of frequency distributions across various teaching methods and multiple linear regression analysis. The results indicated that there were no major differences among the scheduling plans. The two most common scheduling plans, traditional and A/B block, were nearly identical in frequency of various instructional practices. This finding illustrates what supporters of block scheduling observed–that teachers are not changing their teaching methods to take the best advantage of class time by planning enough activities to keep students engaged (Dexter et al., 2006).

Fisher and Frey (2007) followed two middle-school students from one day to determine how teachers use instructional time and how consistent teachers are in using instructional strategies and the effect on student achievement. The two schools, Einstein Academy and Alexander Graham Bell, in the southwest United States and each had enrollments of more than 1,000 students, the majority of whom spoke Spanish in the home. Both schools had significant numbers of students who qualified for free or reduced lunch. Both schools had as their focus improving academic achievement for at-risk students. Data collected for 48 days consisted of observational, interview, and anecdotal data about the operation of the schools. A number of differences and similarities between the schools were noted. Of most relevance to the present study was the difference in the structure. Einstein was on a seven-period day while Bell was on a 4 x 4 block schedule.

Students at Einstein changed classes every 48 minutes, had short passing periods, and had to master a large amount of information every day. The teachers at Einstein taught six classes of 30 students each day, a total of 180 students per day. The teachers had a preparation period that represented 14% of the school day. Fisher and Frey (2007) observed that Gabriel, one of the students followed at Einstein, attended classes with more than 120 different students, which did not allow him to form working relationships and friendships.

Students at the Alexander Graham Bell School attended four classes per day, and teachers taught three periods per day. The students studied in smaller cohorts, referred to as a house system. Fisher and Frey (2007) observed that Edgar, the other student followed, attended classes with 47 other classmates. Of these, nearly 30 had been in his cohort since sixth grade. They also observed that students had longer classroom periods and 25% of the teachers' day was set aside for preparation or planning. Teachers' class sizes were larger, but they saw only 108 students a week. The block schedule at Bell had teachers' support. The increased planning time and lower number of students created conditions for greater teacher collaboration and differentiation of instruction. Fisher and Frey noted two comments made by English teachers from the two schools. An Einstein teacher said, "I feel like I'm running all day" (Fisher & Frey, 2007, p. 209). In contrast, a Bell teacher said, "My 'paper load' is way down, with only about 100 students" (Fisher & Frey, 2007, p. 209).

The widespread adoption of block scheduling means that student achievement data need analyzing to ensure that block scheduling positively affects students achievement and contributes to a decrease in student dropout rates. More research is

necessary to help educators assess student achievement, improve educational programs, and help school administrators make better decisions about the scheduling process. Presently, there is no conclusive evidence about the effects of block scheduling on students' performance, including attendance, dropout rates, and test scores.

Even scarcer research is available about teachers' perceptions of block scheduling and its effects on student achievement. Reeves (2004) noted that school accountability leads to self-examination and change. The present study will examine teachers' perceptions of block scheduling and advantages and disadvantages of block scheduling. The results of this study may help school decision makers to better determine the extent to which block scheduling increases student performance. Additionally, a better understanding of teachers' perceptions about block scheduling will reveal what teachers need to know about effectively implementing the block schedule model.

Summary

This chapter included the literature about the impact and perceptions of block scheduling. The most discussed advantages of block scheduling included improved teacher-student relationships, stronger teacher-teacher relationships, creative instruction, advanced student learning, and improved school climate. A major disadvantage of block scheduling cited was inadequate preparation of teachers for the block scheduling format, resulting in teachers using less diverse methods of instruction. Relevant studies on teacher perceptions of block scheduling were also reviewed from the perspective of methodology, population size, and setting. The studies showed mixed results. In Chapter 3 will be the methodology of the study and will include a description of the research approach, instrumentation, and data collection and analysis procedures.

CHAPTER III

METHODOLOGY

Introduction

This chapter provides information on the methodology used to complete the study. The following sections are included in this chapter: (a) introduction, (b) research questions, (c) research design, (d) population, (e) participants, (f), sample, (g) instrumentation, (h) data collection, (i) respondent rate (j) data analysis, (k) reporting the data, and (l) summary.

The purpose of this mixed methods study was to examine the perceptions of public secondary school teachers regarding block scheduling and to identify the perceived advantages and disadvantages of using the block schedule in three secondary schools in one suburban school system in Georgia. Focus group data were used to confirm and expand the findings of the study.

Research Questions

A mixed research method was used to answer the research questions associated with this study that included:

1. What are secondary teachers' perceptions of block scheduling?
2. What is the impact of grade level taught on secondary teachers' perceptions of block scheduling?
3. What is the impact of years of teaching in a block schedule design on secondary teachers' perceptions of block scheduling?

4. What is the impact of professional development experiences on secondary teachers' perceptions of block scheduling?
5. What are secondary teachers' impressions of the block scheduling format?
6. Have secondary teachers' instructional practices been affected by block scheduling? If so, how, and in what ways?
7. To what extent, if any, have students benefited from the block scheduling format, as perceived by secondary teachers?
8. What are the advantages of block scheduling, as perceived by secondary teachers?
9. What are the disadvantages of block scheduling, as perceived by secondary teachers?
10. What features of block scheduling did secondary teachers like *best*?
11. What features of block scheduling did secondary teachers like *least?*

Research Design

Mixed methodology is "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts, or language into a single study" (Johnson & Onweugbuzie, 2004, p. 17). The study employed a two-phase sequential mixed method explanatory research design. "A sequential explanatory design is typically used to explain and interpret quantitative results by collecting and analyzing follow-up qualitative data" (Creswell, 2009, p. 211). The mixed methods sequential explanatory design consists of two distinct phases of data collection (Figure 1).

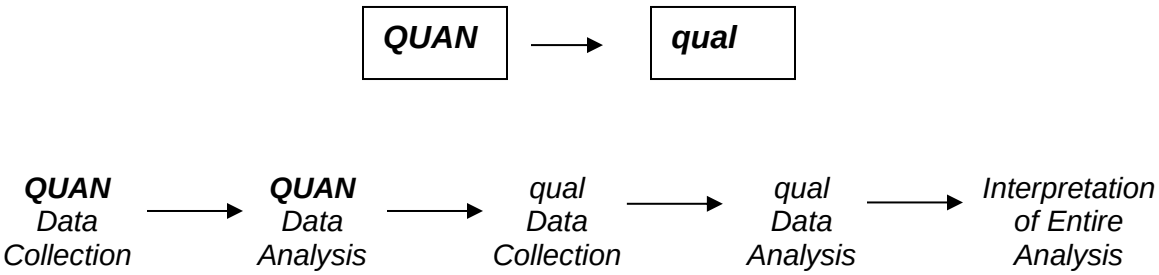

Figure 1. Sequential explanatory design (Adapted from Creswell, 2009).

In the first phase, quantitative (numeric) data are collected and analyzed. In the second phase, qualitative (text) data are collected and analyzed. The quantitative data are emphasized while the qualitative data build upon and help to further understand the initial results of the quantitative data. The final interpretation is collective, based on the results of both phases of data collection. While the interpretation can be lengthy to implement due to the two-phase data collection procedure, it is straightforward, easy to describe and report, and appeals to quantitative researchers because of its emphasis on quantitative data (Creswell, 2009).

According to Creswell (2009), one purpose of a sequential mixed methods study is to obtain statistical, quantitative results from a sample and then follow up with a few individuals to probe those results in more depth. The approach provides a more thorough understanding of a phenomenon.

Onweugbuzie and Teddlie (2003) upheld the notion that mixed methods are not limited to the triangulation of results, but can be used for:

(a) Complementarity (seeking elaboration, enhancement, illustration, and clarification of the results from one method);

(b) Development (i.e., using the results from one method to help inform the other method);

(c) Initiation (i.e., discovering paradoxes and contradictions that lead to a reframing of the research question); and

(d) Expansion (seeking to expand the breadth and range of inquiry by using different methods for different inquiry components). (p. 353)

In the current study, mixed methods were used for complementarity, development, and expansion. The study was conducted in two phases.

Quantitative Phase

Survey methodology was selected as the means of data collection for the initial phase of this study, because it allowed the researcher to collect information that was not available from any other source; it was designed to meet the specific purposes of the study, and it had the strength of consistent measurement (Babbie, 1998). In Phase 1, the survey instrument was given to participating teachers. The survey instruments were placed in each teacher's mailbox at the respective schools.

Quantitative data are numerical in nature, interpreted statistically, and can provide probability information to allow researchers to determine how likely research assertions are to be true in any given situation (Charles & Mertler, 2002, p. 180). Quantitative data when based on an appropriately-sized sample can provide big picture data, suggesting overall trends and relationships between research variables (Gall, Gall, & Borg, 2003, pp. 24-25). However, while quantitative data are useful in identifying potential connections between variables, they are not helpful in determining the causes behind the relationships, which can only be identified through a more personal form of research, qualitative research.

Qualitative Phase

As a follow-up to the questionnaire, one focus group per secondary school ($N = 3$) was conducted with classroom teachers. Phase 2 was conducted after the survey instrument had been returned and analyzed. A focus group can be defined as "a carefully planned discussion to obtain perceptions on a defined area of interest" from a group of participants that have "certain characteristics in common that relate to the topic of the study" (Krueger, 1988, p. 18). Focus groups "offer participants…a safe environment where they can share ideas, beliefs, and attitudes in the company of people from similar situations" (Madriz, 2000, p. 835).

Integration

A mixed method research design combines the best characteristics of both types of data to provide not only an overview of general trends, as provided by the quantitative data, but also a sense of reasons behind the trends, as provided by the qualitative data. Combining the quantitative portion of the study with the case series provides additional information beyond utilizing only one method. The survey allows for the collection of attitudinal and demographic variables. The interviews and focus group discussion were conducted to allow a greater understanding of teachers' perceptions of block scheduling. An additional benefit of combining quantitative data with qualitative data is that multiple types of data collected in case study research can be used to triangulate the data collected in the quantitative portion of the study, corroborating the results and strengthening the validity of the individual data collection methods (Creswell & Plano Clark, 2007, p. 62). Creswell and Plano Clark (2007) observe that the triangulation design, possible only with a mixed methods approach, capitalizes on the strengths of both quantitative and

qualitative design and is "used when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative statistical results with qualitative data" (pp. 62, 65).

Population

The target population for this study consisted of all certified teachers (N = 364) at three public secondary schools in a suburban school district in Georgia, employed during the 2011-12 school year. The selection of schools for the study reflects both typical case and convenience sampling (Gall et al., 2003). It is a typical case in that the schools share many common characteristics (schedule, curriculum, governance structure, number of staff and students) among suburban schools in Georgia. The schools selected are located in the area where the researcher works and lives.

School A had 136 full-time certified teachers on staff. Among this number are 49 male and 87 female teachers; 14 African-American, 117 Caucasian, 4 Hispanic, and 1 Asian teachers. Educational attainment among the group includes 70 Bachelor's, 44 Master's, 20 Specialist, and 2 Doctorate degrees. Among the group, 78 teachers had 10 or fewer years of experience, 38 had 11 to 20 years, and 20 had 21 or more years of experience. The school enrollment included 2,584 students in Grades 9-12. The number of graduates eligible for Hope Scholarships included 33.3%.

School B had 124 certified full-time teachers and one part-time certified teacher on staff. Among this number are 45 male and 80 female teachers; 16 African-American, 107 Caucasian, and 2 Hispanic teachers. Educational attainment among the group includes 36 Bachelor's, 74 Master's, and 15 Specialist's degrees. Among the group, 60 teachers had 10 or fewer years of experience, 28 had 11 to 20 years of experience, and 37

had 21 or more years of experience. The school enrollment included 2,293 students in Grades 9-12. The number of graduates eligible for Hope Scholarships included 35%.

School C had 104 full-time certified teachers and one part-time certified teacher on staff. Among this number, 31 are male and 74 are female teachers; 7 are African-American, 95 are Caucasian, and 2 are Hispanic teachers. Educational attainment among the group includes 59 Bachelor's, 48 Master's, 17 Specialist's, and 1 Doctorate degrees. Among the group, 78 teachers had 10 or fewer years of experience, 38 had 11 to 20 years, and 20 had 21 or more years of experience. The school enrollment included 1,177 students in Grades 9-12. The number of graduates eligible for Hope Scholarships included 52%.

Participants

Teachers who consent to participate in the study must meet the criteria set for participation. First, participants were selected if they have at least three years of traditional and three years of block scheduling experience. Second, teachers were selected if they volunteer to participate. Third, teachers were selected if they are certified by Georgia's Professional Standards Commission. Therefore, teachers who did not have experience in both traditional and block configurations, did not volunteer to participate, or are non-certificated were excluded from participation in the study. The survey was sent to approximately 350 secondary teachers, including the 21 focus group participants. Twenty-one secondary teachers were asked to participate in a focus group discussion to collect specific information regarding perceptions of the effectiveness of block scheduling, advantages and disadvantages of block scheduling, and factors that inhibit (foster) implementation of block scheduling. Twenty-one survey responders (n = 7 per

school) were selected to participate in focus group discussions. Participants were selected based on atypical (unusually low or high) mean survey scores and their willingness to participate.

Sample

Gravetter and Walnau (2005) defined a sample as a "set of individuals selected from a population, usually intended to represent the population in a research study" (p. 4). For the quantitative phase of the study, participants were chosen based on whether they have experience with both traditional and block scheduling, volunteer, and are certified by the Georgia Professional Standard Commission. All teachers who met the specified criteria were asked to complete a questionnaire. At the end of the demographic survey, participants were asked to supply their name and phone number if they are willing to participate in a focus group discussion.

For the qualitative phase of the study, the participants were chosen using a stratified purposeful sampling strategy. In purposeful sampling, researchers intentionally select participants and sites to learn and understand the central phenomenon. The standard used in choosing participants and sites is whether they are "information rich" with respect to the purposes of the study…The intent is to achieve an in-depth understanding of selected individuals (Gall, Gall, & Borg, 2007, p. 178). The stratified approach to purposeful sampling "includes several cases at defined points of variation (e.g., *very unfavorable*, *unfavorable, favorable.* and *very favorable*) with respect to the phenomenon being studied" (Gall et al., 2007, p. 182). For this study, the stratification was determined by mean perception score. Twenty-one potential participants were selected for the qualitative phase. The researcher ranked the mean perception scores and

arranged the rankings into four strata using cut points on the 25th, 50th, and 75th percentile. The identification number of responders in the *very unfavorable* stratum was copied and pasted into an Excel spreadsheet column. The function = RAND ( ) was pasted in the adjacent column. Then, both columns—the identification number and random numbers—were sorted by the random numbers. The first seven identifications numbers were selected. This process was repeated for the *unfavorable* stratum, *favorable,* and the *very favorable* stratum. If a selected individual declined to participate, the next identification number was then selected. If there was no variance to justify groups of *very unfavorable, unfavorable, favorable,* and *very favorable,* a simple random sample was applied for focus group selection.

Researcher's Role

In qualitative research particularly, the role of the researcher as the primary data collection instrument necessitates the identification of personal values, assumptions, and bias at the onset of the study (Creswell, 2003). The researcher's perceptions of scheduling formats, educational leadership, school reform, and related issues have been shaped by his personal experiences. At the time of this research, the researcher was serving as principal at Alternative High School (pseudonym). This gives an awareness of the pros and cons associated with the block-scheduling format.

Due to his experience as principal, the researcher may bring bias to the study. Although every effort was made to ensure objectivity, these biases may shape the way the researcher views and understands data collected and the way experiences are interpreted. The efforts toward objectivity are illustrated by the use of a third party to facilitate the

focus group discussions as well as assurances of anonymity in quantitative data collection activities.

In order to gather unbiased data and increase objectivity, focus groups are best conducted by third parties. First, respondents are more likely to speak candidly to someone who is not personally involved in the program being assessed. Second, focus group moderation is a specialized skill that requires experience to do effectively. It is almost universally agreed that having a good moderator is essential to gathering good qualitative data. Having a third party should elicit the most honest answers.

Instrumentation

The researcher served as the primary data collector. True to the mixed methods research, the research included quantitative and qualitative data collection. The quantitative data collection included a written survey. The qualitative data collection included group interviews.

Teacher Survey

The *Block Scheduling Survey* was adapted for use in the current study. The instrument has been used in a previous study and validity and reliability have been established. The survey was created by Todd (2008) who researched middle and secondary school teachers' perceptions of block scheduling. Todd established validity of the survey by conducting a pilot study. The study consisted of 50 middle and secondary school teachers who were not part of the study. The pilot assisted in establishing content validity and reliability. Todd (2008) established reliability at .95 using Cronbach's alpha. Cronbach's alpha coefficients for Classroom Instruction, Student-Teacher Interactions,

Student Achievement, Teacher Perceptions, and Total Instrument were .857, .908, .723, .594, and .944, respectively (W. Todd, Jr., personal communication, March 13, 2012).

Todd (2008) used exploratory factor analysis (using principal component analysis with a varimax and orthogonal rotation) to establish commonalities among the variables to shorten and further refine the instrument to enhance statistical analysis. Four factors were extracted with an Eigenvalue of 1.00 or greater. The first factor explained 51.94% of the variance, with four factors explaining 70.84% of the variance. The underlying dimensions identified by each factor were as follows: (a) Classroom Instruction, (b) Student-Teacher Interaction, (c) Student Achievement, and (d) Teacher Perception (Todd, 2008, pp. 73-74).

The 23-item survey is scored using a four-point Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Total scores can range from 23 to 92 points. Lower scores indicate an unfavorable response toward block scheduling. Higher scores indicate a favorable response toward block scheduling (Todd, 2008, p. 74).

The *Block Scheduling Survey-Revised* consists of two different sections regarding perceptions of secondary teachers relative to block scheduling (see Appendix A). For measurement purposes, the first section uses a four-point Likert scale. The scale consists of *strongly agree, agree, disagree,* and *strongly disagree.* The researcher coded as follows 1 = *strongly disagree,* 2 = *agree,* 3 = *agree,* 4 = *strongly agree*. The second section consists of demographic questions including gender, ethnicity, grade level taught, and years of teaching experience. Open-ended comments are also solicited at the end of the questionnaire. It should be noted here that (a) one item pertaining to middle schools was eliminated, and (b) following Dillman's (2000) suggestion, demographic indicators

were placed at the end of the survey and the data that directly corresponds to the research questions go first. The final instrument is deemed appropriate for the current study meeting the criteria: that it is based on educational literature, jury-validated, appropriate to the population studied, economic in time required for administration, easy to administer and score.

Focus Groups

There was one focus group per secondary school consisting of $n = 7$, $n = 7$, $n = 7$ classroom teachers per focus group, respectively. Qualitative interviews, yielding rich descriptions, give depth and a humanistic perspective to quantitative results (Gall et al., 2007; Rubin & Rubin, 2005).

Questions for the focus group were designed around the same content as the survey questions but with added depth. The focus group protocol is located in Appendix B. Core questions include:

1. Can you please tell me about your personal background?
2. What are your impressions of the block scheduling format?
3. In what ways did your instructional methods and/or practices change when you used the block?
4. To what extent, if any, do you feel that you and your students have benefitted from using the block scheduling?
5. What are the advantages of block scheduling?
6. What are the disadvantages of block scheduling?
7. What features of block scheduling do you like *best*?
8. What features of block scheduling you like *least*?

9. What additional comments or aspects of block scheduling do you wish to mention?

An audio recording of the focus group was transcribed after each session and was accessible to the researcher and participants only. The focus group protocol was pilot tested. A pilot interview was conducted with two teachers at the researcher's school to practice how to anticipate teacher responses. The practice interview allowed the researcher to analyze the written transcript of the interview to determine when to ask more probing questions. The pilot assisted the researcher in identifying logistical and content oriented refinements. Interviewees examined the focus group protocol's introduction, questions, and probes for clarity, redundancy, content, and completion time. Revisions to the focus group protocol will then be made based on the data analysis and suggestions of the interviewees from the pilot administration (Gall et al., 2007; Patton, 2002).

Reliability and validity. According to Creswell (2003), "validity does not carry the same connotation as it does in quantitative research, nor does its companion reliability or generalizability" (p. 195). Creswell recommends identifying and discussing one or more strategies available to check the accuracy of findings. Reliability procedures to be implemented in this study include careful analysis of documents and checking for consistency in the coding process. Validity procedures for this study included triangulation, member checking, use of rich, thick description to convey the findings, peer debriefing, and the use of an external auditor to review the entire project.

Triangulation. The study employed two types of triangulation: (a) data triangulation which means that data will be collected from more than one location or

form, or from more than one person; and (b) methodological triangulation which requires the use of more than one method of obtaining information.

Member checking. This is a technique that requires consistent checking of interpretations with the participants who provided the data. Employing this technique, the researcher took the final report or descriptions or themes back to participants [via email] to determine accuracy.

Peer debriefing. In an effort to further protect against researcher bias, two peer debriefers assisted the researcher. These individuals acted as devil's advocates by asking about the emerging data probingly to consider alternative explanation and ensure the investigator is describing experiences as participants reported them.

Audit trail. Information was made available for peer and expert audit. It included transcribed interviews, field notes, coding procedures, and correspondence. An external auditor was asked to review the entire study.

Data Collection

First, permission to use the *Block Scheduling Survey* (Todd, 2008) was obtained from the author (see Appendix C). Second, permission to conduct the study was obtained from the K-12 school district (see Appendix D). A formal request was also made of the principals requesting permission to collect data from teachers through survey and group interviews (see Appendix E). Following approval of the doctoral committee, and written permission was obtained from the school and system, permission to conduct the study was sought from the Institutional Review Board of Georgia Southern University.

Following approval from the doctoral committee and upon approval from the Institutional Review Board, the researcher mailed to prospective participants a cover

letter (see Appendix F) to all teachers at their schools' addresses explaining the purpose of the study and its goals. The cover letter also gave assurance of confidentiality throughout the study. The survey was enclosed along with the cover letter and a self-addressed stamped return envelope. Each return envelope was numbered so that a record could be kept of survey return and to facilitate the selection of focus group participants. Creswell (2003) recommends a second letter, survey, informed consent form, and self-addressed return envelope be sent to those teachers who have not responded after 14 days, followed by a post card to those teachers who have not responded after 14 days in order to achieve a maximum return rate. Two weeks after the first reminder, the researcher contacted potential participants again my mail to request that they complete the surveys if they still had not yet done so.

Due to the researcher's positional authority, efforts were made to remove any influence of position from possibly skewing the results of the survey. The surveys were mailed through the United States Postal Service to the participants' schools with a pre-stamped envelope included for convenience. A third party opened the returned envelopes and logged the results of the survey into a database. The language of the survey clearly states the return is the option of the teacher. Participation in the study was strictly voluntary, and the participants were informed that they can withdraw any time during the survey period. Prospective respondents were assured that, when reporting the data, the identity of the district, schools, and personnel involved in the study will be protected. Throughout this study, all individually identifiable information was handled with the utmost discretion.

The second method of data collection involved focus groups. The focus groups were designed to supplement the primary method of data collection and add the perspectives of groups of teachers. The open forum of a focus group allowed the members to share their own thoughts and add feedback to the comments given by other focus group members. There was a total of three focus groups–one focus group per (N = 3) secondary school, consisting of n = 7, n = 7, n = 7 classroom teachers per focus group, respectively. A third party convened and conducted the focus groups. Two educational researchers, who have experience as focus group facilitators were present at all times during the focus groups. An experienced focus group facilitator moderated the group and the other person took notes on a laptop. The focus groups were approximately one hour in length; focus group discussions were recorded and professionally transcribed. To ensure a higher response rate and participation, the focus groups were conducted in local coffee shops at a time convenient with the participants. An invitation to participate in a focus group (see Appendix G) was sent to potential participants along with an informed consent form (see Appendix H).

At the beginning of the focus group discussion, participants were given a consent letter and asked to read it. Prior to the discussion, the focus group facilitator explained the purpose of the study and the consent letter. The focus group discussions were digitally recorded with prior consent of the participants, and verbatim transcriptions were produced for data analysis.

The focus groups were conducted in as non-threatening manner as possible. A focus group discussion guide was used so that all participants being interviewed will be asked the same questions when appropriate. A copy of the focus group protocol was

mailed to the participants so that they could begin to frame their responses. The tapes of the interviews will be kept and stored for at least three years after completion of the study. Tapes will be locked in a secure file cabinet. The focus group convener will probe for detailed responses or descriptions when appropriate. A concerted effort was made to refrain from interjecting personal opinion or responses that would confirm approval or disapproval of opinions or beliefs of focus group participants. The convener adhered to confidentiality and respect privacy. At the end of focus group discussions, the participants were thanked for their time.

Respondent Rate

In general, survey response rates of 50% or higher are acceptable and considered to be representative of the total population; therefore, a response rate of $n = 150$ is deemed as appropriate for this research study (Bartlett, Kotrlik, & Higgins, 2001; Johnson & Christensen, 2008).

Data Analysis

Quantitative data were analyzed using PASW® STATISTICS 17.0. An alpha level of .05 was used in determining statistical significance. Preliminary analysis of data included reviewing key variables using a histogram; the normality of the histogram was evaluated to discern the sample distribution. The Kolmogorv-Smirnoff (K-S) Goodness-of-Fit Test was used to assess whether the sample is from a normal distribution. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to analyze the survey data provided by respondents.

In order to answer Research Question 1, means and standard deviations were calculated for the 23 questions of the *Block Scheduling Survey*. Participants were asked

to share whether they strongly agreed, agreed, disagreed, or strongly disagreed with each question that showed a positive or negative perception about block scheduling. The higher the score the more positive perceptions teachers have on block scheduling. According to Salkind (2008), descriptive statistics are used in studies to describe the characteristics of a set of data.

In order to address Research Questions 2 and 3, a one-way analysis of variance (ANOVA) with Tukey HSD post hoc tests were used for comparisons of means of the continuous variable (teacher perceptions of block scheduling) to determine differences for data collected from groups of Grade 9, Grade 10, Grade 11, and Grade 12 teachers as well as analysis among teachers with 1-10, 11-20, 21-30, and 31-40 years of teaching experience. Effect sizes were reported where the tests indicated statistical significance. Partial eta squared (η^2) was calculated to determine effect size and practical significance. In order to address Research Question 4, an independent-samples *t* test was used to compare the differences in perceptions of block scheduling between teachers who have training/classes on block scheduling and teachers who do not have training/classes on block scheduling.

The researcher used content analysis as the method for analyzing the data from the open-ended (comments) questions. Data were collected from the responses and then coded to identify themes. The frequency of each theme was then converted into percentages.

Qualitative data were collected through the use of audio taping of focus group discussions. The researcher reviewed the notes and transcriptions of the focus groups and identified categories for coding. The researcher carefully listened to each tape and

compared it to the transcription for accuracy. Transcripts were read and phrases or content that were similar were marked. Emergent themes were analyzed from all transcribed interviews. Strauss and Corbin (1990) refer to this process as "open coding." The researcher coded research questions by hand. The categories in the next stage were linked together. Strauss and Corbin describe this process as "axial coding."

Coding of Data

Interview questions were linked to research questions. The researcher identified themes after repeatedly reading the participants' responses to the interview questions. The analysis of interview questions included open and selective coding procedures described by Denzin and Lincoln (2002). In the first step of open coding, constant comparisons were made to form categories. Following the constant comparisons, important portions of the data were segmented and a code assigned for identification. In the selective coding process, different categories were integrated and abstracted to generate new understanding of the phenomenon of interest (Denzin & Lincoln, 2000).

Open coding. Open coding is the process of breaking down, examining, comparing, conceptualizing, and categorizing data (Strauss & Corbin, 1990). Transcripts from the interviews served as the basis for open coding to derive initial categories and ideas. The central purpose was to conceptualize the data into as many categories as possible. Through constant comparative analysis, similarities and differences within categories were discovered.

Selective coding. Selective coding served as the final stage of data analysis to be performed within the study. Strauss and Corbin (1990) explained that selective coding "is the process of selecting the core category, systematically relating it to other

categories, validating those relationships, and filling categories that need further refinement and development" (p. 116). Selective coding explored the relationship between categories.

The categories identified by the coding analyses were analyzed and grouped by themes relating secondary teachers' perceptions of blocks scheduling. The identified themes were connected to the research questions. A narrative discussion of the results, organized by research questions, was developed. Specifically, the following steps were applied: (1) getting a sense of the whole by reading the transcripts carefully; (2) identifying text segments with brackets; (3) assigning a code word or phrase to describe the meaning of the text segment; (4) making a list and grouping the code word; (5) reviewing the transcription; and (6) reducing the codes to themes, which are similar codes put together, forming the major ideas of the transcription (Creswell, 2005).

Summary

This chapter outlined the methodology employed in this research. The mixed method research procedures were selected for this investigation of secondary teachers' perceptions of block scheduling. The inclusion of both quantitative and qualitative data provided the researcher with a better understanding of the problem than if either dataset had been used alone. The sequential explanatory design was adopted to structure the data collection and data analysis. In addition, Chapter III explained in detail the procedures for procuring a sample as well as the rationale for sample selection and described the instruments that were used. Data collection procedures and methods of data analysis were outlined.

CHAPTER IV

REPORT OF DATA AND DATA ANALYSIS

The purpose of this study was to explore teacher perceptions of block scheduling in a suburban Georgia public school district. The study used quantitative and qualitative methods of inquiry to ascertain teacher perceptions of block scheduling. The quantitative phase focused on teachers' perceptions of block scheduling. The qualitative phase of this study had two purposes: to gain deeper understanding of the teachers' responses from the quantitative phase, and to expand on teachers' perceptions of block scheduling.

The sample consisted of full-time teachers from three suburban secondary schools within the same Georgia public school district. A total of 362 teachers were invited to participate in this research. A total of 138 teachers participated, which is a 38.12% response rate.

A two-phased mixed method sequential design was used to collect data for the study. Quantitative data were collected in Phase 1 of the study and analyzed using PASW® Statistics 17.0. Descriptive statistics including frequencies, percentages, means, and standard deviations were derived from the data collected from the questionnaire. After analysis of the quantitative data, qualitative data were collected through focus group discussions and responses were coded and analyzed. The results from both phases are reported in this chapter, as is a summary of the results as a whole.

The following research questions guided the research:

1. What are secondary teachers' perceptions of block scheduling?

2. What is the impact of grade level taught on teachers' perceptions of block scheduling?
3. What is the impact of years of teaching in a block schedule design on teachers' perceptions of block scheduling?
4. What is the impact of professional development experiences on teachers' perceptions of block scheduling?
5. What are secondary teachers' impressions of the block scheduling format?
6. Have secondary teachers' instructional practices been affected by block scheduling? If so, how, and in what ways?
7. To what extent, if any, have students benefited from the block scheduling format, as perceived by secondary teachers?
8. What are the advantages of block scheduling, as perceived by secondary teachers?
9. What are the disadvantages of block scheduling, as perceived by secondary teachers?
10. What features of block scheduling did secondary teachers like *best*?
11. What features of block scheduling did secondary teachers like *least?*

Demographic Profile Survey

Demographic information was collected for the following: (a) age, (b) race/ ethnicity, (c) experience with block schedule format, (d) experience with traditional schedule format, (e) grade level taught, (f) years of teaching experience, and (g) classes/ training related to block scheduling. The mean age of participants was 46.36 (*SD* = 9.434), with a median of 47.

Participants were asked to choose one of the following that best describes their ethnicity: American Indian or Alaskan Native, Asian or Pacific Islander, Black or African American, Caucasian (other than Hispanic), or Hispanic. Of the surveys received, a majority of respondents (73.3%) described themselves as Caucasian (see Table 1).

Table 1

Race/Ethnicity of Study Participants

Variable	Frequency	Percentage
Race/Ethnicity		
African American	25	18.5
Caucasian	99	73.3
Hispanic	4	3.0
Asian/Pacific Islander	4	3.0
Multi-racial	3	2.2
Total respondents	135	100.0

Table 2 displays the years of experience working with a block schedule format. The findings revealed that 55.2% of teachers had 3-9 years of experience with the block scheduling format.

Table 3 displays the years of experience working with a traditional schedule format. The findings revealed that 58.5% of teachers had 3-9 years of experience with the traditional scheduling format.

Table 4 examines grade level assignments. The frequency for Grade 10 was the highest with a frequency of 38 teachers. The lowest frequency of grade level taught was Grade 12, which had a frequency of 28.

Table 2

Years of Experience with Block Scheduling Format

Variable	Frequency	Percentage
Experience with block scheduling (years)		
3 – 9	74	55.2
10 – 16	57	42.5
17 – 23	2	1.5
24 – 30	0	0.0
Over 31	1	0.7
Total responses	134	100.0

Table 3

Years of Experience with Traditional Scheduling Format

Variable	Frequency	Percentage
Experience with traditional scheduling format (years)		
3 – 9	79	58.5
10 – 16	43	31.9
17 – 23	12	8.9
24 – 31	1	0.9
Over 31	0	0.0
Total responses	135	100.0

Table 4

Grade Level Assignments of Study Participants

Variable	Frequency	Percentage
Grade level assignment		
Grade 9	36	26.1
Grade 10	38	27.5
Grade 11	36	26.1
Grade 12	28	20.3
Total responses	138	100.0

Table 5 displays the number of years of experience teachers have in the classroom. The findings revealed that 37.0% of the participants had 11-20 years of experience as a classroom teacher.

Table 5

Years of Classroom Experience of Study Participants

Variable	Frequency	Percentage
Classroom experience (years)		
1 – 10	30	21.7
11 – 20	51	37.0
21 – 30	42	30.4
31 – 40	15	10.9
Total responses	138	100.0

An analysis of the independent variable professional development experience is presented in Table 6. A total of 94 teachers (73.4%) had received professional development training.

Table 6

Professional Development Experience of Study Participants

Variable	Frequency	Percentage
Professional development		
Yes	94	73.4
No	34	26.6
Total responses	128	100.0

Further, 15 teachers (10.87%) had received college course work. Seventy five teachers (54.3%) had participated in district-level or school-level professional development. Thirty nine teachers (28.3%) had taken regional educational services agency (RESA) training classes. Twenty eight teachers (20.3%) had participated in RESA workshops. Nine teachers (6.5%) had attended professional conferences.

Quantitative Research Findings

Research Question One

The first research question asked, "What are secondary teachers' perceptions of block scheduling?"

In order to answer Research Question 1, means and standard deviations were calculated for the 23 questions of the *Block Scheduling Survey*. Participants were asked to share whether they strongly agreed, agreed, disagreed, or strongly disagreed with each question that showed a positive or negative perception about block scheduling. Analyses

of the questions on the instrument are presented in the form of an item analysis. Table 7 provides each question along with the means and standard deviations.

As shown in Table 7, the lowest mean was for item 18, which emphasizes that males are more likely to have the greater increase in achievement under a block schedule than a traditional schedule. The mean for this item was 2.17 (*SD* = .644). Teachers felt the most positive about item 9, which states that block scheduling, allows more time to complete labs and class projects. The mean for statement 9 was 3.50 (*SD* = .632). In addition, Table 7 presents the overall mean score for the *Block Scheduling Survey* (*M* = 2.88, *SD* = .479).

Table 7

Descriptive Analysis of Block Scheduling Survey

Item	Mean	Standard Deviation
1. Block scheduling allows more individualized attention to students than a traditional schedule.	3.15	.833
2. Block scheduling has decreased the number of disruptions in my classroom.	2.65	.864
3. Block scheduling has provided more planning time to increase the quality of instruction.	3.21	.671
4. Block scheduling allows students to increase their achievement (overall grade) in my classroom.	2.79	.731
5. Students can complete more assignments because they have fewer classes on which to focus.	2.97	.709
6. Block scheduling has increased the attendance in my classroom.	2.49	.720

(table continued)

Table 7 (continued)

Item	Mean	Standard Deviation
7. The quality of my relationship with my students has increased under a block schedule.	2.88	.835
8. Block scheduling has increased my level of instruction.	2.96	.820
9. Block scheduling allows more time to complete labs and class projects.	3.50	.632
10. High schools are more likely to increase student achievement under a block schedule than a traditional schedule.	2.72	.838
11. I have experienced a decrease in the amount of paperwork under a block schedule.	2.53	1.000
12. Block scheduling is more likely to have an increase in math achievement.	2.64	.775
13. Block scheduling is more likely to have an increase in language arts achievement.	2.68	.711
14. Block scheduling allows for a greater variety of activities.	3.20	.787
15. Block scheduling allows teachers to utilize the full 75 or 90 minutes effectively.	3.12	.844
16. Students understand the subject content better under a block schedule.	2.66	.765
17. Students have more opportunities to ask questions and receive feedback.	3.01	.767
18. Males are more likely to have the greater increase in achievement under a block schedule than a traditional schedule.	2.17	.644
19. Block scheduling is more likely to increase achievement in Advanced Placement math courses.	2.83	.692

(table continued)

Table 7 (continued)

Item	Mean	Standard Deviation
20. Block scheduling is more likely to increase achievement in Advanced Placement English courses.	2.84	.692
21. Students are more likely to have problems completing assignments when they have been absent from school or missed a class under a block schedule than a traditional schedule.	2.94	.675
22. Block scheduling allows teachers to complete more subject content objectives.	3.01	.860
23. Block scheduling allows teachers to plan more effectively.	3.16	.727
Average Score	2.88	.479
Mean Total Score	65.04	11.905

Note. Higher scores indicate a more favorable perception of block scheduling.

As can be seen from an examination of Table 7, the mean total score on the *Block Schedule Survey* was 65.04, a favorable perception of block scheduling. This mean score is generally favorable; however the criterion used to classify the total score was the quartile distribution of respondents' total scores and is sample based rather than absolute. Based on this criterion, total scores were classified as 75+, very favorable; 50-74, favorable; 24-49, unfavorable; 0-23, very unfavorable.

Percentage frequencies for secondary teachers' responses to the *Block Scheduling Survey* are shown in Table 8. Respondents in the survey were asked to indicate the extent to which they agreed or disagreed with each statement. Teachers used the following Likert scale to respond: 4 (Strongly Agree); 3 (Agree); 2 (Disagree); 1 (Strongly Disagree).

Table 8

Distribution of Secondary Teachers' Responses to Block Scheduling Survey

Item	*N*	% Strongly Agree (4)	% Agree (3)	% Disagree (2)	% Strongly Disagree (1)
1. Block scheduling allows more individualized attention to students than a traditional schedule.	136	39.0	41.9	14.7	4.4
2. Block scheduling has decreased the number of disruptions in my classroom.	136	15.4	44.9	29.4	10.3
3. Block scheduling has provided more planning time to increase the quality of instruction.	136	33.1	57.4	7.4	2.2
4. Block scheduling allows students to increase their achievement (overall grade) in my classroom.	136	13.2	58.1	23.5	5.1
5. Block scheduling has increased the attendance in my classroom.	136	7.4	39.7	47.1	5.9
6. Students can complete more assignments because they have fewer classes on which to focus.	136	19.9	61.0	15.4	3.7
7. The quality of my relationship with my students has increased under a block schedule	136	22.1	51.5	19.1	7.4
8. Block scheduling has increased my level of instruction.	126	26.5	48.5	19.9	5.1
9. Blocks scheduling allows more time to complete labs and class projects.	137	54.7	42.3	0.7	2.2

(table continued)

Table 8 (continued)

Item	*N*	% Strongly Agree (4)	% Agree (3)	% Disagree (2)	% Strongly Disagree (1)
10. High schools are more likely to increase student achievement under a block schedule than a traditional schedule.	137	16.8	46.7	28.5	8.0
11. I have experienced a decrease in the amount of paperwork under a block schedule.	137	18.2	35.8	27.0	19.0
12. Block scheduling is more likely to have an increase in math achievement.	131	9.9	52.7	29.0	8.4
13. Block scheduling is more likely to have an increase in language arts achievement.	134	9.0	55.2	30.6	5.2
14. Block scheduling allows for a greater variety of activities.	137	40.1	43.1	13.9	2.9
15. Block scheduling allows teachers to utilize the full 75 or 90 minutes effectively.	136	35.3	47.8	10.3	6.6
16. Students understand the subject content better under a block schedule.	135	11.1	50.4	31.9	6.7
17. Students have more opportunities to ask questions and receive feedback.	137	26.3	52.6	17.5	3.6
18. Males are more likely to have the greater increase in achievement under a block schedule than a traditional schedule.	132	0.0	30.3	56.1	13.6

(table continued)

Table 8 (continued)

Item	*N*	% Strongly Agree (4)	% Agree (3)	% Disagree (2)	% Strongly Disagree (1)
19. Block scheduling is more likely to increase achievement in Advanced Placement math courses.	131	14.5	56.5	26.7	2.3
20. Block scheduling is more likely to increase achievement in Advanced Placement English courses.	134	15.7	54.5	28.4	1.5
21. Students are more likely to have problems completing assignments when they have been absent from school or missed a class under a block schedule than a traditional schedule.	136	18.4	58.8	21.3	1.5
22. Block scheduling allows teachers to complete more subject content objectives.	135	31.9	42.2	20.7	5.2
23. Block scheduling allows teachers to plan more effectively.	133	33.1	51.9	12.8	2.3

Research Question Two

The second research question asked, "What is the impact of grade level taught on teachers' perceptions of block scheduling?"

A One-Way Analysis of Variance (ANOVA) was used to determine if there was a significant difference in secondary teachers' perceptions of block scheduling as it relates to grade level taught. An alpha level of .05 was used in determining statistical significance. Levene's Test of Homogeneity of Variances was not statistically significant, F (3, 34) = .273, p = .845; thus, there was insufficient evidence to indicate that the assumption of equal variances was violated. Means and standard deviations are

shown in Table 9. The One-Way Analysis of Variance procedure employed to compare the four sets of mean ratings yielded an *F* ratio of .249, *p* = .862. These findings indicate no significant differences among the four groups of teachers (see Table 10).

Table 9

Means and Standard Deviations for Perceptions of Block Scheduling by Grade Level Taught

Variable	Mean	Standard Deviation	*N*
Grade level assigned			
Grade 9	2.90	.486	36
Grade 10	2.90	.501	38
Grade 11	2.91	.449	36
Grade 12	2.82	.529	28
Total	2.88	.486	138

Table 10

One-Way Analysis of Variance on Differences in Teachers' Perceptions of Block Scheduling by Grade Level Taught

Source	*SS*	*df*	*MS*	*F-ratio*	Sig. of *F*
Between Groups	.179	3	.060	.249	.862
Within Groups	32.156	134	.240		
Total	32.335	137			

Research Question Three

The third research question asked, "What is the impact of years of teaching experience in a block schedule design on teachers' perceptions of block scheduling?"

A One-Way ANOVA was used to determine if there was a significant difference in secondary teachers' perceptions of block scheduling as it relates to years of teaching experience. An alpha level of .05 was used in determining statistical significance. Levene's Test of Homogeneity of Variances was not significant, F (3, 130) = 1.646, p = .162; thus, there was insufficient evidence to indicate that the assumption of equal variances was violated. Means and standard deviations are shown in Table 11.

Table 11

Means and Standard Deviations for Perceptions of Block Scheduling by Classroom Teaching Experience with Block Scheduling

Variable	Mean	Standard Deviation	*N*
Class teaching experience (years)			
1 – 5	2.93	.455	37
6 – 10	2.72	.517	52
11 – 15	3.06	.428	41
Over 15	2.84	.220	4
Total	2.89	.484	134

The results of the analysis of variance used in determining if there was a significant difference in the perceptions of teachers and classroom teaching experience are revealed in Table 12. It was determined that there was a significant difference in the

perceptions of block scheduling among the four groups of teachers, F (3, 130) = 4.026, p = .009.

Table 12

One-Way Analysis of Variance on Difference in Teachers' Perceptions of Block Scheduling by Classroom Teaching Experience

Source	*SS*	*df*	*MS*	*F-ratio*	Sig. of *F*
Between Groups	2.650	3	.883	4.026	.009
Within Groups	28.527	130	.219		
Total	31.177	133			

A Tukey HSD (Honest Significant Difference) employed to determine where significant differences occurred revealed that the mean perception of teachers with 11-15 years of teaching using the block scheduling format (3.06) was significantly higher than the mean perception of teachers with 6-10 years of teaching using the block scheduling format (2.72). Table 13 displays a complete summary of the post hoc analysis.

The above analysis utilized the ANOVA F statistic to determine the presence of statistical significance. Inherent assumptions are (a) the data are randomly sampled, (b) the variances of the population are equal, and (c) the variables under investigation are normally distributed from the sample. Levene's Test of Homogeneity of Variances was not significant. This gives assurance that the Type I error rate for the ANOVA F does not deviate considerably from the set probability level ($\alpha = .05$).

Tukey's HSD controls experiment-wise error rate. (Experiment-wise results in too many Type II errors; test-wise results in too many Type I errors.) Normal and

probability plots of the data in distributed groups indicated that the assumptions of univariate normality were tenable. Eta squared (η^2) = SS_B/SS_T = 2.650/31.177 = .085. According to Cohen's (1987) guidelines, this would be a small effect size.

Table 13

Tukey HSD Comparison on Perceptions of Block Scheduling with Years of Teaching Utilizing the Block Scheduling Format

	Experience with block schedule (I)	Experience with block schedule (J)	Mean Difference (I-J)	*SE*	Sig.
Tukey HSD	1-5 years	6-10 years	.20746	.10075	.172
		11-15 years	-.12562	.10622	.639
		Over 15 years	.09311	.24656	.982
	6-10 years	1-5 years	-.20746	.10075	.172
		11-15 years	-.33307*	.09784	.005
		Over 15 years	-.11435	.24306	.965
	11-15 years	1-5 years	.12562	.10622	.639
		6-10 years	.33307*	.09784	.005
		Over 15 years	.21873	.24538	.809
	Over 15 years	1-5 years	-.09311	.24656	.982
		6-10 years	.11435	.24306	.965
		11-15 years	-.21873	.24538	.809

*. The mean difference is significant at the 0.05 level.

Research Question 4

The fourth research question asked, "What is the impact of professional development experiences on teachers' perceptions of block scheduling?"

The Independent-Samples *t* Test was used to determine if there is a difference in the perceptions of teachers and professional development experiences. An alpha level of .05 was used in determining statistical significance. Means and standard deviations are displayed in Table 14.

Table 14

Perceptions by Professional Development Experience

Variable	Mean	Standard Deviation	*N*
Yes	2.93	.459	94
No	2.82	.530	34

Because the number of participants in the comparison groups was unequal, homogeneity factors were evaluated with Levene's Test for Equality of Variances. Levene's Test for Equality of Variances was not statistically significant; thus, there was insufficient evidence that the assumption of equal variances was violated. There was no statistically significant difference, at the .05 level, t (126) = 1.163, p = .247, between the means of the two groups (see Table 15). Teachers who participated in professional development activities had similar perceptions of block scheduling to teachers who did not participate in professional development activities.

Qualitative Findings

Three focus groups were conducted to gather the qualitative data. The first focus group was conducted on May 17, 2012 and included seven purposefully selected teachers from School A. The group included one computer science teacher, one biology teacher, one English teacher, one media specialist, one world languages teacher, one history and social studies teacher, and one Title I coordinator. The second focus group was

conducted on May 17, 2012 and included six purposively selected teachers from School B. The group included one physical education teacher, one social studies teacher, one science teacher, one English teacher, two mathematics teachers, and one special education teacher. The third focus group was conducted on May 31, 2012 and included seven purposively selected teachers from School C. The group included one English teacher, one business education teacher, two social studies teachers, one French/ visual arts teacher, one special education teacher, and one mathematics teacher. A non-probability sample was taken for each of the focus groups and consent was obtained (Appendix H) from all the participants prior to the start of the focus groups. The three focus group sessions were audio-taped and transcribed by a professional transcription service.

Table 15

t-Test for Independent Samples for Perceptions of Block Scheduling by Professional Development Experiences

	Variances	Levene's Test for Equality of Variances		*t*-Test for Equality of Means		
		F	Sig.	*t*	*df*	Sig.
Perception	Equal variances assumed	1.265	.263	1.163	126	.247
	Equal variances not assumed			1.088	51.987	.282

The nature and purpose of the focus groups were explained to all participants before beginning the one-hour focus group session. The procedures for the meeting were

reviewed and all participants were assured of the confidentiality of all comments and responses to the focus group questions. The researcher developed the qualitative questions and points of discussion for the focus group based on the explanatory mixed methods model which focuses on qualitative data to help explain or build upon initial quantitative results (Creswell, 2009). The following questions and points of discussion guided the conversation during the focus group sessions:

1. What are your impressions of the block scheduling format?
2. Did your instructional methods and/or practices change when you used the block? If so, in what ways?
3. To what extent, if any, do you feel that you and your students have benefitted from using the block schedule?
4. What are the advantages of block scheduling?
5. What are the disadvantages of block scheduling?
6. What features of block scheduling do you like best?
7. What features of block scheduling do you like least?
8. Are there additional comments or aspects of block scheduling you wish to mention?

Transcripts of the focus group interviews were examined to suggest themes which summarized the perceptions of teachers regarding block scheduling. The researcher employed the procedures for analyzing qualitative data suggested by Creswell (2009).

The interviews were conducted by an impartial third party and were audio-taped for transcribing purposes. Participants were identified by a number to protect their identities. After the interviews were transcribed, those documents were attached to an

email message and sent to each teacher for member checking. Initial data analysis began after the member checks were completed.

Focus group participants were selected based on the administration of the quantitative instrument. The process of choosing individuals was directly related to the scores obtained on the *Block Schedule Survey*. Teachers selected for the focus group discussions were identified by ranking the scores from highest to lowest, then placing the data into three strata. Scores were grouped by quartiles. High scores were those in the top quartile and low scores were those in the bottom quartile. Average scores were those in the 2nd and 3rd quartiles, selecting the participant that score closest to the midline. Seven teachers were selected with high scores; seven teachers were selected with low scores; seven teachers were selected with average scores.

In order to examine the responses to the focus group questions qualitatively, data were transcribed, coded, and entered in a database to look for similarities and differences in the responses. Each focus group conversation was coded and analyzed separately. Comparative analysis was then used to arrive at common themes for the focus groups (Charmaz, 2000). Data were clustered into themes to answer research questions.

Research Question 5

Research Question 5 asked, "What are secondary teachers' impressions of the block scheduling format?"

Participant responses to Interview Question 2 ("What are your impressions of the block scheduling format?") answered Research Question 5. The teachers in this study were equivocal when they spoke of the block scheduling format. A slight majority (52.38%) reported favorable impressions of block scheduling. Twenty-one teachers

provided responses to Interview Question 2, "What are your impressions of block scheduling?" When responses to Interview Question 2 were coded, three categories emerged:

1. Favorable impressions
2. Unfavorable impressions
3. Ambivalent impressions

Eleven teachers (52.38%) had favorable impressions, 8 teachers (38.10%) had negative impressions, and 2 teachers (9.52%) were ambivalent. The reader is referred to Appendix I for the frequency of responses for each category of the second interview question.

Category 1: Favorable impressions. When teachers were asked Interview Question 2 ("What are your impressions of block scheduling?"), 11 reported favorable impressions. Participant FGA-1 stated, "I want to say—well, overall, it's been really positive. Having taught on both of them [block and traditional], I'd prefer block over traditional." Participant FGB-14 stated:

"I tend to appreciate the fact that we participate in block scheduling. As an English teacher, I do my best to take advantage of the extra time. Students are able to do research for different projects, as well as visiting the library for literature assignments."

Category 2: Unfavorable impressions. Eight teachers responded with an answer that fell into this category. Participant FGC-15 stated:

"I found with foreign language, especially, it's very challenging to help students reach a really confident communicative level with the language in only 90 days in

the semester, and many of the students don't get another French class for an entire semester, year, or sometimes two or three, based on their block-scheduling selections. Whereas when I taught in a more traditional environment, it was more like that they would go from one year to the next with the next level with fewer breaks between."

Category 3: Ambivalent impressions. When teachers were asked Interview Question 2 ("What is your impression of block scheduling?"), two teachers were ambivalent. Participant FGC-20 stated:

"I teach special education, both resource study skills and collaborative, and I kind of see both sides of the coin because the kids have a hard time staying focused, especially the ones that I work with. On the other hand, I've seen that they do much better having, in essence, three academic classes in one semester as opposed to six or seven, depending on the traditional schedule they might be on."

Participant FGA-5 stated:

"Same thing with foreign language [content coverage], you can't absorb at all levels. It takes away from the amount of things that you can teach to students. But it is good for, you know, being able to do extra activities and I like having the 90 minutes for the students. But as far as being able to teach them the material, it's hard to do that because of the absorption. And I also like it because we don't have to focus on so many kids. On the traditional schedule, I usually have 100 kids."

Research Question 6

Research Question 6 asked, "Have secondary teachers' instructional practices been affected by block scheduling? If so, how, and in what ways?"

Participants' responses to Interview Question 3 ("Did your instructional methods and/or practices change when you used the block schedule?") answered Research Question 6. When responses to Interview Question 3 were coded, five themes emerged:

1. Increased instructional opportunities
2. Varied activities
3. Depth of content
4. Student engagement
5. Adequate time

Twenty teachers responded to Interview Question 3. Teachers' responses were diverse. Most responses (35.09%) were in category 2, varied activities. The reader is referred to Appendix J for the frequency of responses for each category of the third interview question.

Category 1: Increased instructional opportunities. When teachers were asked Interview Question 3 ("Did your instructional methods and/or practices change when you used the block?"), four teachers responded in this category. Participant FGA-2 stated:

"My instructional methods have changed just a little bit. The block schedule has allowed for more group projects; whereas, on the traditional schedule I felt it a little more confining in teaching my lessons and participating in various projects because the 50-minute time frame did not allow me to incorporate a variety of teaching methods that I would not otherwise be able to have time to do on a traditional schedule."

Participant FGB-10 stated:

"Yes, my instructional practices have changed because I could use more technology in my classroom teaching language arts. I could work with the students more in writing because I can have more individual conferences. I can have more time to work on those things the kids really need a lot of help with during that time."

Participant FGC-21 stated:

"They [instructional methods] change in some ways. I start out class with a warm-up, and then we go over the homework, and then we have the lesson. We practice the lesson. You have more time for that in the block."

Category 2: Varied activities. When teachers were asked the question, "Did your instructional methods and/or practices change when you used the block schedule?" eight had a response in this category. Participant FGB-8 stated:

"Well, they changed somewhat. I try to use a variety of activities so they won't be bored. When you're teaching PE, they get more time to practice. Example, if I'm teaching a skill and volleyball or setting the ball up, they get maybe 10 or 15 minutes to practice in that. Then, I'll let them play a little small game. The first team that scores gets a point, and the team that does not score goes off [the court] and another group gets in. So, everybody gets an opportunity to participate."

Participant FGA-4 stated:

"My instructional methods have changed. I'm able to spend a little more time with my students in lab activities. I find that presentations are better because the block scheduling allows time for pre-discussion as well as post-discussion. I'm

able to cover most of the planned activities in one day, rather than splitting the activity up and having to come back the next day to complete it."

Category 3: Depth of Content. When teachers were asked the question "Did your instructional methods and/or practices change when you used the block," four teachers had a response. Participant FGB-11 said:

"Well, once again, I'm going to say for my Spanish classes I have had to make some changes as far as instruction to make sure that I have the concepts covered…I've had to compound what I've been doing and make sure that it is not boring for the students."

Participant FGC-18 stated:

"With teaching English, in the traditional schedule we usually split it up, grammar and composition one semester, and literature the second semester. And, of course, with block scheduling, we are combining that and so I find myself getting creative with finding ways to incorporate all three areas in a 90-minute block."

Category 4: Student engagement. Concerning the same question, four teachers answered with a response in this category. Participant FGC-16 said:

"I find that in the traditional schedule I intended to do one topic or one theme for the day, and we really wear it out, but you can't do that with the 90-minute classes and you really wear the students out. I have to do two or three topics, and sometimes if one is particularly challenging, I have to admit, I'm going in a totally different direction that is less taxing mentally. Because—especially with another language—the barrier is already there for communication and trying to help them get through those is a little tough. "

Participant FGA-1 stated:

"In the Business Education Department, for someone to be fully engaged and working on a computer 90 minutes a day is just really a hard task. We try to break it up. We got a program of lessons and we try to get them on test prep and other teaching tools and use it all in the classroom, and also reading the news. And there are some other things on the Internet to break it up. Because 90 minutes of sitting there working, you know, just straight on a computer, there are fewer of them that can't really do that for the whole 90 minutes of class."

Category 5: Adequate time. Two teachers made responses in this category.

Participant FGA-7 stated:

"In special education we have interrelated. So I have those real fast learners. They just got to get it done. They're finished and begin to disrupt the class. But then you have this loner who's just trying to catch up. So, in between, I'm trying to entertain the fast learners as this loner gets frustrated because of her attention span. When focusing on loners, then I lose that piece in between. It's kind of difficult."

Participant FGA-3 stated, "I would have to say the most significant change I have seen is just the time. Having more time to convey the lesson and activities in a timely manner, without pressure, really helps."

Research Question 7

Research Question 7 asked, "To what extent, if any, have students benefited from the block scheduling format, as perceived by secondary teachers?" Interview Question 4 ("To what extent, if any, do you feel that you and your students have benefitted from

using the block schedule?") answered Research Question 7. When responses to Interview Question 4 were coded, six categories emerged. The categories were as follows:

1. More in-depth learning/retention of learning
2. Fewer academic classes
3. More instructional opportunities
4. More time to work individually with students
5. Increased opportunities to know/assist students
6. No benefit

Twenty-one teachers responded to Interview Question 4. Teachers' responses were diverse. One third of the responses (33.3%) were in category 1, more in-depth learning/retention of learning. The reader is referred to Appendix K for the frequency of responses for each category of the fourth interview question.

Category 1: More in-depth learning/retention of learning. When teachers were asked the question, "To what extent, if any, do you feel that you and your students have benefited from using the block schedule?" seven teachers had a response for this category. Participant FGA-2 stated:

"I know in an English class that I've collaborated in, it's nice to be able to, when doing research, talk about it, kind of work through it, and then also have time within that block to take them to the computer lab and let them actually sit down and physically begin the process of writing out their research projects."

Participant FGA-7 stated:

"A benefit that I find is I have more time to focus on teaching the entire lesson in a single day. I'm able to get immediate feedback from the students and review concepts, if necessary. I also find that the students will ask more questions; therefore allowing me to really go into more detail with the lesson."

Category 2: Fewer academic classes. Participant FGA-5 stated, "Block scheduling benefits the student by allowing the students to possibly complete their work in a timely fashion because they simply don't have so many classes on which to focus." Participant FGC-21 stated, "I' going to piggy back on what you two said a few minutes ago when she said that, especially for the special education students, it's fewer classes at a time, so fewer teachers that you have to maybe juggle…"

Category 3: More instructional opportunities. Participant FGC-16 stated:

"One advantage I found for my students is that we get a lot more time to practice speaking in a particular class period. I probably spend about exactly the same amount of time giving presentations as I did in the traditional schedule, but we get a lot more time for application."

Participant FGA-3 stated:

"In the traditional schedule, you always run into the problem that when you're teaching a lesson, whether you're finished or not, or if the students get it, or not, it's time to leave. With block scheduling, we have more time to complete the lesson and expand on the lesson. I don't feel rushed in teaching the lesson, and I'm sure the students don't feel rushed in trying to get it."

Category 4: More time to work individually with students.

Participant FGC-19 stated:

"I would teach a [computer science] concept and then give them a chance to practice or create the document that we're talking about and with block scheduling, that's easier for me to do. But it's also more difficult because I have some students that finish quickly and the other ones take a while. For those, the slow ones, the block schedule is better it gives them more time to complete something."

Participant FGA-1 stated, "The greatest benefit to the students is it allows them more time in the classroom, especially if it's in a subject that the student is having challenges with."

Category 5: Increased opportunities to know/assist students. Participant FGB-12 stated, "I see a great advantage in using block scheduling in my social studies classes because it gives me the opportunity to really get to know my kids better…I get to know them better because I know by name, as opposed to being in seven classes."

Participant FGA-4 stated:

"I think block scheduling has allowed me to build better relationship with my students. Because it cuts down on the class size, I have more of an opportunity to get to know the students as far as their strengths and their weaknesses. I'm able to identify their troubled areas and more able to focus on their learning needs. The benefit for the student, as well, is I think it allows them to build the relationships with their teachers. They have more time to spend with them in a

particular classroom setting, and I believe it probably gives them more confidence to ask questions concerning the lessons being taught for that day."

Category 6: No benefit. One teacher perceived no benefit of block scheduling for either the teachers or the students. Participant FGB-11 stated, "…I hear what you are saying and I am glad that it's working for you. But, as far as I can see, I don't see any significant difference in [block schedule] benefitting either me or my students."

Research Question 8

Research Question 8 asked, "What are the advantages of block scheduling, as perceived by secondary teachers?"

Interview Question 5 ("What are the advantages of block scheduling?") answered Research Question 8. When responses to Interview Question 5 were coded, 12 categories emerged. The categories were as follows:

1. The 90-minute planning period
2. The block schedule benefits college-bound students
3. Uninterrupted time
4. Credit-hour production
5. Available time
6. Better relationships with students
7. Fewer students/fewer classes
8. Fewer disruptions/announcements
9. More one-on-one time with students
10. Fewer papers to grade

11. Less time to change class
12. Depth of content coverage

Twenty-one teachers responded to Interview Question 5. Teachers responses were numerous and diverse. Most responses (28.57%) were in category 1, the 90-minute planning period, and category 6, better relationships with students. While the amount of time was always available, teachers perceived that planning was more time-consuming and more specific planning was needed to teach effectively in a block schedule. The reader is referred to Appendix L for the frequency of responses for each category of the fifth interview question.

Category 1: The 90-miniute planning period. Participant FGA-5 stated:

> "We have more time to complete lesson plans and go over them and make any necessary changes we need to make before actually presenting it to the students. I feel like I am able to pace my class instruction time a little better because of the longer class time."

Participant FGB-14 stated, "One of the advantages that I like to take advantage of is that I have more time to complete lesson plans and review them for changes I may need to make."

Category 2: The block schedule benefits college-bound students. Participant FGA-4 stated, "An advantage of block scheduling is that it's good for college-bound students because it kind of mirrors the collegiate schedule." Participant FGC-18 stated, "I typically teach seniors and so with block scheduling, I will say this: For seniors it does seem to prepare them better for what they're going to see in the college setting."

Category 3: Uninterrupted time. Participant FGA-3 stated, "An advantage of block scheduling is that we have more time without interruptions in the classroom."

Category 4: Credit-hour production. Participant FGA-3 stated, "Eight credits versus six credits; 90 minutes versus 50 minutes per term; fewer students at a time."

Category 5: Available time. Participant FGA-6 stated, "The advantage for me is the time." Participant FGA-7 stated, "One of the advantages that I find is that I have time to do things that I wouldn't ordinarily have time to do in 50 minutes on a block schedule." Participant FGB-10 stated, "One of the advantages is that you have more time with your students in the block schedule."

Category 6: Better relationships with students. Participant FGB-8 stated, "…I have a better relationship with my students because I get to know them by name because of the small classes."

Category 7: Fewer students/fewer classes. Participant FGB-11 stated, "Well, if I had to just narrow it down to an advantage, it is less students in the classroom. I have to agree with that."

Category 8: Fewer disruptions/announcements. Participant FGB-12 stated, "Well, in my social studies class, there is less disruption, fewer announcements coming over the inter-com system."

Category 9: More one-on-one time with students. Participant FGC-16 stated: "One of the big advantages, I guess, for me, is still going to be the time you spend with the students using the target language, French; or in my art classes, the studio

work with actual drawings or painting or sculpting. The one-on-one time with students, who have challenges, I think I would never have been able to handle it. The last two semesters I've had significant numbers of students from resource classes in with a professional, and I don't think I would have managed that as well in a traditional setting, where there's a little time. I would have to go over there and walk through the explanations again in a different way."

Category 10: Fewer papers to grade. Participant FGB-8 stated, "The advantages of block scheduling…I have less papers to grade."

Category 11: Less time to change class. Participant FGB-8 stated, "The advantages of block scheduling…Less time for them to change class."

Category 12: Depth of content coverage. Participant FGC-17 stated:

"I've taught regular, advance, and AP classes; all three types on a traditional schedule and a block schedule. With the regular classes, I liked the traditional better with them, but then with the advance and especially with the AP classes, the depth of analysis that's required, just 45 minutes never felt like enough time, and with AP, all the concepts that they're learning are cause-and-effect, in some form. And I felt like that was nearly impossible to do in 45 minutes, because once you got into a great groove and discussion going on in the causes, poof, time to leave, and so then you having to recap."

Participant FGC-17 further stated:

"I felt like every day I was recapping what I did before with the AP classes, and that just seemed like a waste of time; whereas, on the block, we get to cover an entire concept in one day and the cause and effect which makes it far easier for

the students to be able to write about and explain, especially when it comes time for the AP test. And pretty much all of AP U. S. History is cause and effect."

Research Question 9

Research Question 9 asked, "What are the disadvantages of block scheduling, as perceived by secondary teachers?" Interview Question 6 ("What are the disadvantages of block scheduling?") answered Research Question 9. When responses to Interview Question 6 were coded, seven categories emerged. The categories were as follows:

1. Less time for parental involvement
2. Absenteeism/attendance
3. Retention of learning
4. Student Engagement
5. Course sequencing
6. Depth of content coverage
7. Condensed curriculum content

Twenty teachers responded to Interview Question 6. Although the advantages of block scheduling outweighed the disadvantages, according to the perceptions of teachers, many teachers cited disadvantages. Most responses (40.0%) were in category 3, student engagement. The reader is referred to Appendix M for the frequency of responses for each category of the sixth interview question.

Category 1: Less time for parental involvement. Participant FGB-8 stated, "The disadvantages of block scheduling for me would be the less time to get involved with their parents."

Category 2: Absenteeism/attendance. Participant FGB-8 stated:

"If they miss a class, I got to go back and try to catch up with the work that they've missed and get it to them, and that creates a problem. And sometimes, them being absent is a disadvantage because of I've got to go back and find the paperwork for them so they can get their grades caught up."

Participant FGB-10 stated:

"Make-up work for kids who are absent is another disadvantage because they still have their four classes and they still have their regular work and if they're out one day, they miss a lot of work. And if they don't get it right away, then they get behind. So that's the real, real disadvantage of absences for students."

Category 3: Retention of learning. Participant FGA-4 stated:

"The students have less retention in classes that progress on a fast pace. The more class time that we have, I think, tends to "fool" the teacher into thinking there is more overall class time. So, some topics we may end up covering more than is required or necessary. And lastly, students tend to lose focus in longer class settings."

Participant FGB-9 stated:

"Since I'm teaching math I've noticed that if you're taking it the first semester and you've successfully completed Math I, you don't have to take math again until the beginning of the next year. So, it leaves a semester where you have no math, and seeing that I am a math teacher, I want you to have math all the time. So the students that get a chance to skip math, even though they've been successful and passed it, don't get to review any of that math for an entire

semester. So, I just have a slight concern about them retaining all of the math instruction from the previous year, since you've got a semester break."

Category 4: Student engagement. FGB-10 stated:

"One of the disadvantages, of course, would be trying to keep them focused. At times it's difficult, especially if you have a learner that is not as happy about school as others or isn't as interested in school as others. It's hard to keep someone focused. That would be one of the main disadvantages.

FGA-2 stated, "I think block scheduling tends to be too long for some students because they become restless."

Category 5: Course sequencing. Participant FGA-7 stated, "I think sequential classes tend to cause problems for students." Participant FGA-3 stated, "In courses that are sequenced, a student may have English the first term and not have English again until a year later. I think this concept is definitely a disadvantage for the students because of a lack of retention from the previous year."

Category 6: Depth of content coverage. FGC-15 stated, "I don't have enough time to teach all the material I need to teach by the state and I'm always crunched for time. And I feel like I'm always leaving out something and I'm not covering enough." FGC-18 stated, "But one again, you still feel like you're not covering everything in the semester that you need to cover."

Category 7: Condensed curriculum content. Participant FGC-20 stated, "I have seen with, especially in the U. S. History classes that I collab' in, there's just not enough time to get through the curriculum as far as we need to get prior to end-of-course testing."

Research Question 10

Research Question 10 asked, "What features of block scheduling did secondary teachers like *best?* Interview Question 7 ("What features of block scheduling do you like best?") answered Research Question 10. When responses to Interview Question 7 were coded, nine categories emerged. The categories were as follows:

1. 90 minutes versus 150 minutes
2. Time format enhances coverage
3. More opportunities to know/assist students
4. 90-minute planning time
5. Fewer class changes/fewer discipline problems
6. Variety of instructional methods
7. Student engagement
8. Fewer students
9. More opportunities for electives

Twenty-one teachers responded to Interview Question 7. Most responses (42.86%) were in category 1, 90 minutes versus 150 minutes. The reader is referred to Appendix N for the frequency of responses for each category of the eighth interview question.

Category 1: 90 minute instructional time. Participant FGC-19 stated, "The best advantage of block scheduling is not pressure of having to hurry and get through a shorter length or period of time." Participant FGB-8 stated, "The feature that I like the most, it provides additional instructional time for practice if you're in science, if you're in PE, if you're in music, or one of those things." Participant

FGA-4 stated, “The features that appeal to me the most are that I have more time for labs and other activities, and I have more planning time.”

Category 2: Time format enhances coverage. Participant FGA-5 stated, “Best feature is more time to get the concepts across to students.” Participant FGC-16 stated, “I think, again, the best advantage for me is the time we can spend in an individual class period practicing with concepts and skills that we don’t normally get to do in the traditional schedule.”

Category 3: More opportunities to know/assist students. Participant FGC-20 stated:

“The best thing about block scheduling for me as a special education teacher, especially, is getting to know the students on a personal level, but also getting to know their needs as far as their disability is concerned, be it emotional, behavioral, academic, whatever that may be.”

Participant FGB-13 stated:

“Well, I think overall the block scheduling has done so much to improve the teaching and learning in my classroom. I think that, you know, the individuals I help-getting to know my students better. I think my test scores have gotten better. Their attitudes have gotten better. They can complete activities and the discipline has improved. I just think all of those things add to the wonderful benefits of block scheduling.”

Category 4: 90-minute planning time. Participant FGA-4 stated, “The features that appeal to me the most are that I have more time for labs and other activities,

and I have more planning time." Participant FGA-2 stated, "I like the extended amount of time I have to plan."

Category 5: Fewer class changes/less discipline. Participant FGB-12 stated: "It [block schedule] eliminates passing time in the hallway because most of the time you have your disciplinary problems either in the hallways or the cafeteria. It improves – it reduces discipline referrals because it's less passing time. And when you got less passing time, fewer kids interact in the hallway, which cuts down on discipline referrals."

Category 6: Variety of instructional methods. Participant FGB-10 stated, "You're able to use more technology because you can go to the technology lab and you have more time to spend actually doing research or what other activities that you're going to do that day."

Category 7: Student engagement. Participant FGB-12 stated, "Well, the thing I like about block scheduling, it gives the kids more time to focus on their subject matter."

Category 8: Fewer students. Participant FGA-1 stated, "The best feature for me is that I have fewer students during the semester, which cuts down on grading papers, and the like."

Category 9: More opportunities for electives. Participant FGA-4 stated, "The block schedule provides more opportunities for students to take a variety of classes." Participant FGA-2 stated, "The feature I like the best is the students have more opportunity for electives."

Research Question 11

Research Question 11 asked, "What features of block scheduling did secondary teachers like *least?* Interview Question 8 ("What features of block scheduling do you like least?") answered Research Question 11. When responses to Interview Question 8 were coded, five categories emerged. The categories were as follows:

1. Content eliminated or condensed
2. Student engagement
3. Course sequencing
4. Inconsistency in credits
5. Absenteeism and make-up work.

Twenty-one teachers responded to Interview Question 8. Most responses (23.81%) were in category 1, content eliminated or condensed and category 3, course sequencing. The reader is referred to Appendix O for the frequency by category for Research Question 11.

Category 1: Content eliminated or condensed. Participant FGC-15 stated, "I don't have enough time to teach the math." Participant FGC-17 stated, "So disadvantage, just not always feeling like I could cover everything by the time the end-of-course test came."

Category 2: Student engagement. Participant FGC-19 stated, "Disadvantage, keeping them entertained, interested, focused." Participant FGC-20 stated, "As far as disadvantages, I see it day in and day out, is keeping the kids focused, especial the special ed. kids – that may be their disability, but keeping them focused, keeping them on task, and keeping them organized."

Category 3: Course sequencing. Participant FGC-21 stated, "The worst thing is the either semester or year between a Math I and a Math II, or a Math II and whatever the subjects that build on each other." Participant FGB-9 stated, "The feature of block scheduling that I dislike least is the separation between math courses. If you pass the math course the first semester you don't have to take another math until the beginning of the first semester of the next year." Participant FGA-2 stated, "The feature I like least is less time for sequential subjects."

Category 4: Inconsistency in credits. Participant FGB-8 stated: "Sometimes when you're coming from another school system and they're not on block scheduling, the grades and stuff –the credits don't match. And I also don't like the fact that sometimes when you're coming from different school systems, they won't take that credit, and then you've got to figure out a way to give them that credit once they get there and get on block."

Participant FGA-6 stated, "Disliked features, separation of terms and stress that it causes for placement of transfer students, students coming from another school."

Category 5: Absenteeism and make-up work. Participant FGB-10 stated, "What I like least about the block scheduling is when students are absent, they have a hard time making up the work. And we do have some students that tend to miss quite a few days." Participant FGB-12 stated, "The disadvantage I see is kids with poor attendance. If they got poor attendance, they're not going to be able to keep up with their work." Participant FGA-5 stated, "The least liked feature is the problems it causes for students who are absent a lot."

The final question ("Are there additional comments or aspects of block scheduling you wish to mention?") gave the teachers a chance to share additional information. Participant FGB-13 shared that overall the switch to block scheduling was a positive experience.

Summary

One hundred thirty-eight of 362 participants responded to a mailed survey which examined teachers' perceptions of block scheduling. Participants represented three suburban secondary schools within the same Georgia public school district. Quantitative survey data were analyzed through descriptive statistics, analysis of variance among grade level taught and years of teaching experience, and *t*-test analysis between professional development experience groups.

The answers to the 23 survey questions were shown in frequency distributions and percentage tables. A notable quantitative finding was that teachers had a favorable perception of block scheduling. No significant difference in perceptions of block scheduling was found among teacher groups according to grade level. Teachers with 11-15 years of teaching experience using the block schedule format had significantly more favorable perceptions of block scheduling compared to teachers with 6-10 years of teaching using the block schedule format. There was no significant difference in the perceptions of block scheduling between teachers with professional development experience and teachers without professional development experience.

Analyses of three focus group interviews with 21 teachers (7 per focus group) were used as a qualitative means to gain deeper insight into teachers' perceptions of block scheduling. Patterns and themes emerged regarding teachers' impressions of block

scheduling, the impact of block scheduling on teachers' instructional practices, perceived benefits of block scheduling to students, advantages and disadvantages of block scheduling, and features best and least liked about the block scheduling format.

This chapter provided the data analysis results and addressed each research question. Chapter 5 will provide a discussion of these findings with regard to their relation to the current literature, the interpretation of results and the implications for practice. In addition, Chapter 5 will provide a discussion of the current study and provide recommendations for future research.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS

This chapter is divided into seven sections. The first section includes a brief summary of the entire research study, reiterating the purpose of the study, the research questions, and the methodology used to investigate the research questions. A discussion of the research finding is presented in the second section. Connections are made between the review of literature and the research findings of this study. The conclusions drawn from the study as they related to the research questions and hypotheses are provided in the third section. The implications of the study for the field of educational administration are provided in the fourth section. The fifth section addresses recommendations for further research. The sixth section outlines a brief plan for disseminating the research findings. The last section of the chapter presents the researcher's concluding thoughts about the research.

Summary

Schools are organized for learning in numerous and diverse ways. The most common form of organization is through time, either by the number of periods in the day or the length of the instructional module. The purpose of the study was to explore teacher perceptions of block scheduling in a suburban Georgia public school district. Teachers typically have little "say so" in the decision making process of implementing plans that will affect the entire learning environment in a school district. Stakeholders, who have little or no impact in planning may not put forth their best effort in promoting the product, in this case block scheduling. The research questions provided the basis for both the quantitative and qualitative aspects of the study:

1. What are secondary teachers' perceptions of block scheduling?
2. What is the impact of grade level taught on teachers' perceptions of block scheduling?
3. What is the impact of years of teaching in a block schedule design on teachers' perceptions of block scheduling?
4. What is the impact of professional development experiences on teachers' perceptions of block scheduling?
5. What are secondary teachers' impressions of the block scheduling format?
6. Have secondary teachers instructional practices been affected by block scheduling? If so, how, and in what ways?
7. To what extent, if any, have students benefitted from the block scheduling format, as perceived by secondary teachers?
8. What are the advantages of block scheduling, as perceived by secondary teachers?
9. What are the disadvantages of block scheduling as perceived by secondary teachers?
10. What features of block scheduling did secondary teachers like *best?*
11. What features of block scheduling did secondary teachers like *least?*

The researcher collected both quantitative and qualitative data to address the research questions. The researcher used a descriptive survey design with a written survey to gather information about the perceptions of secondary teachers. Three teacher focus groups were also conducted. The *Block Scheduling Survey* (Todd, 2008), presented in Appendix A, is a 23-item survey measuring teachers' perceptions of blocks scheduling.

A total of 138 teachers chose to participate in the study by completing and returning the mailed survey.

The study was designed to gather data in two phases. Phase 1 involved the collection of questionnaire data to describe the perceptions of teachers regarding block scheduling.

Phase 2 involved the collection of focus group data from teachers who were willing to participate. The three focus groups consisted of one focus group per (N = 3) secondary school, composed of n = 7, n = 7, n = 7 classroom teachers per focus group, respectively. The focus group sessions were approximately one hour in length and were conducted separately at different times. Focus group sessions were recorded and transcribed.

Analysis of Research Findings

This study found that secondary teachers, regardless of grade levels, had a favorable perception of block scheduling, that teachers with 11-15 years of teaching experience using the block schedule format had significantly more favorable perceptions of block scheduling compared to teachers with 6-10 years of teaching using the block schedule format, and no significant difference in the perceptions of block scheduling occurred between teachers with professional development experience and teachers without professional development experience.

Findings from focus group discussions showed secondary teachers' instructional practices were affected by block scheduling, that students have benefited significantly from the block scheduling format, that block scheduling had some advantages and disadvantages, but advantages of block scheduling far outweigh the disadvantages. In

addition, finding showed that secondary teachers have both likes and dislikes of block scheduling, but the features of block scheduling that secondary teachers like best are myriad and diverse. These include 90 minutes versus 150 minutes; time format enhances content coverage; more opportunities to know/assist students, 90-minute planning time, and fewer class changes/fewer discipline problems, variety of instructional methods, student engagement, fewer students, and more opportunities for electives. The features of block scheduling that secondary teachers like least are themes of concern.

Discussion of Research Findings

The findings of this study must be reviewed with caution by readers. The findings merely reflect the perceptions of those 138 teachers who responded to the survey from the three secondary schools within the same Georgia public school district. The findings may not be reflective of the perceptions of block scheduling in other similar secondary schools in the state of Georgia. The researcher believes that the time of the school year when the survey and interviews were conducted may have contributed to the response rates and results. The surveys and interviews were conducted at the end of the school year. The end of the school year is a harried time of standardized testing, post planning, and ready for summer attitudes. Late May is the time when teachers are wrapping up the school year. This could limit cooperation as well as affect the outcome of the study.

In the accountability and standards-based testing environment of NCLB (2002) and mandates to improve learning opportunities for students, block scheduling was viewed as a way to increase time for instruction and student learning and has become one of the most widely accepted strategies used to increase student learning (Heck &

Hallinger, 2009; Kearney & Smith, 2009; Rickard & Banville, 2005; Rinke & Valli, 2009). Educators report that fewer, longer instructional blocks are more beneficial to the advancement of students than shorter blocks (Rinke & Valli, 2009). Queen (2008) identified four positive components of block scheduling including flexibility in classroom instruction, longer periods for teachers, one or two class preparations per semester, and extended time during the school day for intense study. These four components represent potential benefits when a school system moves its secondary educational schools to block scheduling. The reorganization of instructional time into longer, more flexible blocks offered possibilities to extend classroom experiences, to reduce discipline problems, to improve student attendance, and to decrease failure rates (Biesinger et al., 2008; Canady & Rettig, 1996; Queen, 2008).

Relative to this study, even though secondary teachers support the findings from the literature, that fewer and longer instructional blocks are more beneficial to the advancement of students than shorter blocks (Baker et al., 2006; Biesinger, 2008; Canady & Rettig; Lin, 2007), giving attention to adverse effects of block scheduling is necessary. Some of the adverse effects identified in this study included student boredom and lack of focus in 90-minute classes, the penalty occurring from being absent, and the lack of continuity in content when students complete content in one period and have to wait until the next school year to complete the second phase of content.

Despite the benefits of block scheduling, some adverse effects resulted. In this study, secondary teachers identified other issues that could affect student achievement negatively. For example, teachers feel pressured to cover an increased amount of knowledge, concepts, and skills in in the block of time provided, which does not take into

consideration the time students need for reflection on and mastery of materials and concepts. Teacher also reflected that students who transfer into the block schedule setting from a traditional schedule also tend to experience gaps in the curriculum.

Baker (2009) noted that increasing class time and shortening the number of classes per day often resulted in scheduling conflicts that prevented students from participating in some programs. Hynes-Hunter and Avery's (2007) study of the effects of block scheduling on student achievement in Grades 6 to 12 showed mixed results. These findings of scheduling conflicts and student achievements were not expressed and concerns by teachers in this study.

Biesinger et al. (2008) and Jenkins et al. (2002) both concluded that the use of teaching strategies in the block scheduling format reflected the level of staff development relative to block scheduling and that teachers needed professional development on how to effectively use the additional time provided in the block schedule. However the analysis of quantitative data in this study suggested that participation in professional development did not appreciably alter teachers' perceptions; teachers who participated in professional development activities had perceptions of block scheduling similar to teachers who did not participate in professional development activities.

The quantitative data in this study also revealed that grade level had no impact on perceptions. This supports the Ryan and Cooper (2008) and Zepeda and Mayers (2006) studies. Both of these studies found that there is no consensus among educators about the benefits of block scheduling. The responses of the teachers in this study, while generally favorable, support the conclusions drawn by Ryan and Cooper (2008) and Zepeda and Mayers (2006).

The results from both the quantitative and qualitative data revealed that in general, the teachers who participated in this study had mixed impressions of the block scheduling format. It is interesting to note that the responses of the teachers in this study did support the findings in Crowe's (2006) study. Crowe identified and compared perceptions of block scheduling of 16 teachers using in-depth interviews and found that participants overall had positive perceptions of block scheduling and none of the participants expressed a preference for returning to a traditional schedule. Based on the results of Ryan and Cooper (2008) and Zepeda and Mayers (2006) who presented considerable evidence about the mixed findings regarding the benefits of block scheduling, this finding would appear to support mixed perceptions with the final analysis indicating that teachers perceptions are generally favorable of block scheduling.

Conclusions

Quantitative and qualitative findings and demographic data for the study were presented in Chapter 4. Based on the data presented, several conclusions were drawn about secondary teachers' perceptions of block scheduling. First, even though secondary teachers found block scheduling to be an effective method of organizing the school day for instruction, it was concluded that block scheduling is not the total answer to instructional enhancement and growth in achievement because other issues need addressing, including maintaining the attention of students, resolving students' problems occurring from transferring in and out block scheduling, and determining curriculum limitations on how much content to include in any one course for the duration of the class.

When considering the percent of teachers who either had unfavorable perceptions or were ambivalent about block scheduling (approximately 48%), a conclusion is that classroom practice should be explored further to investigate how teachers apply the four major benefits Queen (2008) identified of block scheduling, including flexibility in classroom instruction, use longer periods for instruction, plan one or two classes per semester, and use extended time during the school day for students to reap the benefits of block scheduling.

Even though the advantages of block scheduling outweigh the disadvantages, as reflected by teachers in this study, if block scheduling is to produce the positive results for which it is aimed, a conclusion is that practitioners should strive to reduce the disadvantages. Disadvantages such as less time for parental involvement, absenteeism, attendance, retention of learning, student engagement, course sequencing, depth of content coverage and condensed curriculum content are elements that can affect the quality of instruction in a critical manner, reduce the effectiveness of the educational program, and forge a closer connection between theory and practice in the implementation process of block scheduling.

A final conclusion is based on the limited research available on teachers' perceptions of block scheduling. There is a need for further research involving teachers who have moved from traditional schedules to sustained implementation of block scheduling. The study should examine the effectiveness of block scheduling on teachers' overall acceptance of block scheduling, perceptions that it will improve students' academic achievement, and if they understand fully how to teach effectively in a block scheduled school day.

In addition, the use of block scheduling imposes upon teachers the need to use a variety of instructional strategies within the class period and across the curriculum (Hackman, 1999). Thus, teachers have opportunities to teach using more diverse methods than those in classes on traditional schedules. By expanding their teaching strategies and methods, teachers in block scheduling formats can help students better understand subject concepts and materials. The ability to use a wide range of instructional strategies implies that teachers have the skills and knowledge to implement the strategies. The results of this study showed that teachers who participated in professional development activities had perceptions similar to teachers who did not participate in professional development activities. However, the results did not indicate what those perceptions were and how they differed between the two groups of teachers. This suggests that more emphasis be placed on professional development that aims to maximize the positive impact of block scheduling and to equip teachers with the ability to implement and use a variety of instructional strategies.

Implications

The implications of this study go beyond teachers. The results of this study also have implications for principals, superintendents, and boards of education. Principals should create block scheduling learning communities within the schools to ensure that all teachers in block scheduling formats are using instructional strategies effectively and following basic principles and procedures necessary in block scheduling. Additionally, principals should ensure that mechanisms are in place to periodically and effectively evaluate block scheduling. Principals and superintendents should include colleges of education in the learning communities. These learning communities can advocate for the

inclusion of block scheduling in teacher and principal education programs. A negative climate can prevent optimal learning and development while a positive school climate affects everyone associated with the schools; students, staff, parents, and the community. The administrators should consider ways to continue current practices and ways of improving upon them. Boards of education should ensure that all stakeholders—students, teachers, parents, administrators, and community organizations—are involved in investigating, planning, designing, implementing, evaluating, and supporting the block schedule.

Recommendations

Based on the findings of the study that examined teachers' perceptions of block scheduling and the review of literature, the following recommendations are made for future researchers, school leaders and community members.

1. This study focused on one school system which provided a limited number of participants. It is recommended that this study be replicated on a wider scale, examining teachers' perceptions of block scheduling in rural, urban, and suburban schools. The research would be more widely applied if it contained more school systems in a variety of locations.
2. As this study was only conducted among three secondary schools in Georgia, it is important that a large-scale study be conducted to include all secondary schools. While this study may be of value to some school districts, results from a larger study may offer critical information in determining the beneficial effects of block scheduling.

3. This study looked at perceptions of a non-probability sample of teachers. A more comprehensive study should include students, administrators, and parents in regard to different perceptions of scheduling formats utilized by the school district.
4. It is recommended that future researchers conduct empirical studies of student achievement in content areas in schools utilizing the block schedule.
5. It is recommended that a study be conducted on the influence of the block schedule on student success in college and/or the workplace.
6. It is recommended that comparative studies (e.g., A/B, 4 x 4, 4 x 8) be conducted to address advantages and disadvantages. This would permit comparisons of academic outcomes for comparison groups.
7. The finding of significant differences in perceptions of block scheduling between teachers with 6-10 years of teaching experience and teachers with 11-15 years of teaching experience suggests that further research is necessary.
8. Graduate faculty can provide support to school districts attempting to implement block scheduling by assisting districts to assure that organization and scheduling are aligned with best practices noted in the research findings. Finally, all decisions on scheduling options should be based on solid research and data.
9. It is also recommended that conducting the study at various times in the academic year my produce somewhat different teacher perceptions.

Dissemination

This study may be useful for all individuals who are involved in supporting and promoting education in the state of Georgia and in the United States. In addition, the

researcher will contribute to professional literature related to block scheduling by publishing the dissertation and writing an article about teachers' perceptions of block scheduling. The researcher plans to disseminate the findings of this study within the school district in which the study was conducted.

Concluding Thoughts

As a result of its flexibility, block scheduling allows school officials to add more classes to the curriculum to meet NCLB standards (Queen, 2008). Block scheduling could reduce or eliminate problems prevalent in classrooms on traditional schedules, such as the vast number of subjects, different class rules and instructional procedures, multiple homework assignments, and disjointed curricula (Biesinger et al., 2008). Queen (2008) outlined the major steps for implementing block scheduling, and these steps remain imperative for schools considering and currently using a block schedule. Professional issues stemming from the implementation of block scheduling include an increased need to apply differentiated instruction geared to the individual needs of students. Thus, it is important to study teachers' perceptions of this method. School leaders, administrators, and educational policymakers may benefit from this study, as the study participants have revealed what they like best and what they like least about block scheduling.

The number one objective is to promote reform in the educational process to improve teaching and learning. If block scheduling is truly a reform the evidence must be conclusive. Several studies have failed to prove this premise. The body of research is characterized by inconsistent evidence. While this study produced generally favorable results, none of the findings were overwhelming which supports the need for further research.

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APPENDICES

APPENDIX A

BLOCK SCHEDULING SURVEY - REVISED

BLOCK SCHEDULING SURVEY – REVISED

Please respond to the following statements concerning schools that operate on a non-traditional (block) schedule. A block or modified schedule is defined as a schedule which may include four 90-minute classes completing four Carnegie units in one semester, 4 x 4; eight 90-minute classes meeting every other day per semester, A/B; or four 75-minute classes with an extended learning period.

There are two sections to the questionnaire. ***Section A*** inquires about perceptions on block scheduling and ***Section B*** requires demographic information. Please circle one response to each item. There is no right or wrong answer.

Section A

The following scale will be used for this section.

SA = Strongly Agree ***A = Agree*** ***D = Disagree*** ***SD = Strongly Disagree***

1. Block scheduling allows more individualized attention to students than a traditional schedule. SA A D SD
2. Block scheduling has decreased the number of disruptions in my classroom. SA A D SD
3. Block scheduling has provided more planning time to increase the quality of instruction. SA A D SD
4. Block scheduling allows students to increase their achievement (overall grade) in my classroom. SA A D SD
5. Students can complete more assignments because they have fewer classes on which to focus. SA A D SD
6. Block scheduling has increased the attendance in my classroom. SA A D SD
7. The quality of my relationship with my students has increased under a block schedule. SA A D SD
8. Block scheduling has increased my level of instruction. SA A D SD

SA = Strongly Agree ***A = Strongly Agree*** ***D = Disagree*** ***SD = Strongly Disagree***

9.	Block scheduling allows more time to complete labs and class projects.	SA	A	D	SD
10.	High schools are more likely to increase student achievement under a block schedule than a traditional schedule.	SA	A	D	SD
11.	I have experienced a decrease in the amount of paperwork under a block schedule.	SA	A	D	SD
12.	Block scheduling is more likely to have an increase in math achievement.	SA	A	D	SD
13.	Block scheduling is more likely to have an increase in language arts achievement.	SA	A	D	SD
14.	Block scheduling allows for a greater variety of activities.	SA	A	D	SD
15.	Block scheduling allows teachers to utilize the full 75 or 90 minutes effectively.	SA	A	D	SD
16.	Students understand the subject content better under a block schedule.	SA	A	D	SD
17.	Students have more opportunities to ask questions and receive feedback.	SA	A	D	SD
18.	Males are more likely to have the greater increase in achievement under a block schedule than a traditional schedule.	SA	A	D	SD
19.	Block scheduling is more likely to increase achievement in Advanced Placement math courses.	SA	A	D	SD
20.	Block scheduling is more likely to increase achievement in Advanced Placement English courses.	SA	A	D	SD
21.	Students are more likely to have problems completing assignments when they have been absent from school or missed a class under a block schedule than a traditional schedule.	SA	A	D	SD

SA = Strongly Agree ***A = Agree*** ***D = Disagree*** ***SD = Strongly Disagree***

22. Block scheduling allows teachers to complete more subject content objectives. SA A D SD

23. Block scheduling allows teachers to plan more effectively. SA A D SD

Section B

Please check or respond to the following items. These factors will be considered as ancillary findings in my study.

1. What is your current age? _____

2. What do you call your racial or ethnic group? (Please circle one).
   a. African American
   b. White
   c. Hispanic
   d. Asian/Pacific Islander
   e. American Indian or Alaskan Native
   f. Multi-Racial

3. How many years of experience do you have working with a block schedule format? _____

4. How many years of experience do you have working with a traditional schedule format? _____

5. What grade level do you teach? (Please circle one).
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior

6. How many years of teaching experience do you have? (Please circle one).
   a. 1-10 years
   b. 11-20 years
   c. 21-30 years
   d. 31-40 years

7. Have you ever participated in any classes/training related to block scheduling

   _____ Yes _____ No

8. If yes, check all types of training that apply and indicate the number taken.
   _____ College course work (# taken_____)
   _____System/School staff development (# taken _____)
   _____RESA training classes (# taken _____)
   _____RESA workshops (# taken _____)
   _____ Professional conference sessions (# taken_____)
   _____ Other (Describe) _____

If you would like to receive a copy of my summary findings from the study, please check the preferred method for use in sending the results:

___Email
(Email Address) _____

___Regular Mail
(Mailing Address) _____

Signature of Teacher: _____

Name of Secondary School: _____

Date: _____

APPENDIX B

FOCUS GROUP DISCUSSION GUIDE

FOCUS GROUP DISCUSSION GUIDE

This research project is part of Vern Mamon's doctoral dissertation work at Georgia Southern University. Its purpose is to examine secondary school teachers' perceptions of block scheduling.

As you are aware the *Block Schedule Teacher Survey* was administered earlier in which teachers were asked their opinions of the effectiveness of the block scheduling format. Because of the nature of the survey, most responses were limited to forced-choice items.

The purpose of this focus group discussion is to give you the opportunity to respond in an open-ended format to some of the issues raised in the earlier survey. Your individual feelings and opinions are what are of interest; there are no correct or incorrect responses. Feel free to describe what you think is important to you in the questions asked and also to raise issues you think may be important but may be unrelated to the original question. The focus group will take no longer than one hour.

The focus group leader will be recording your responses so that they can be transcribed and analyzed. He will not share your identify with anyone, nor will your name, school name, or school district name appear anywhere on the transcripts.

Do you have any questions before we begin?

6. Can you please tell me about your personal background?
7. What are your impressions of the block scheduling format?
8. Did your instructional methods and/or practices change when you used the block? If so, in what way(s)?
9. To what extent, if any, do you feel that you and your students have benefitted from using the block scheduling?
10. What are the advantages of block scheduling?
11. What are the disadvantages of block scheduling?
12. What features of block scheduling do you like best?
13. What features of block scheduling you like least?
14. Are there additional comments or aspects of block scheduling you wish to mention?

APPENDIX C

PERMISSION TO USE BLOCK SCHEDULING SURVEY

PERMISSION TO USE THE BLOCK SCHEDULING SURVEY

From: Todd, Will <wtodd@atlanta.k12.ga.us>
Subject: Survey
To: "vlmamon" <vlmamon@bellsouth.net>
Date: Sunday, October 16, 2011, 3:10 PM

Hello Mr. Mamon,

I had the opportunity to read your request and speak with you Saturday evening regarding using my "block scheduling" survey as a tool to gain knowledge related to alternative scheduling models in your school district. As a researcher and educator with a local school district, I had similar interests in analyzing perceptions and achievement to determine whether middle and high school teachers' views and standardized test scores differ. Therefore, you have my permission to and support to continue the research related to examining block schedules as a type of school reform. Good luck on your research.

Cordially,

Will Todd, Jr., Ed.D.
Model Teacher Leader, SRT-3

----Original Message---
From: vlmamon [mailto:vlmamon@bellsouth.net]
Sent: Sat 10/15/2011 4:08 PM
To: Todd, Will
Subject: Survey

APPENDIX D

AUTHORIZATION TO CONDUCT RESEARCH

AUTHORIZATION TO CONDUCT RESEARCH

Coweta County Schools Research Application, page 3

I understand that no individual participant(s) or school(s) will be identifiable through this research project. I recognize that the research is not complete until a copy of the results is sent to the Director of Testing and Research for the Coweta County School System.

Due to the system's comprehensive academic program, research activities will be conducted during the following months unless special arrangements have been made:

October-November **AND** **January-March**

Please attach a copy of all correspondence (cover letter, questionnaires(s), etc. that you intend to send to Coweta County School System staff.

Will students be surveyed as a part of this study? ___YES ✓NO
If "YES", please attach a copy of your proposed survey instrument.

I realize that I will be notified in writing concerning the status of this research project within three weeks after the application has been received.

Karen L Barnes — 2-28-12

Signature of Applicant **Date**

Please send this completed application with requested materials to:

Ms. Maria Carroll
Lead Psychologist/SST Coord.
Coweta County School System
P.O. Box 280
Newnan, Georgia 30264

For System Use Only

Date Application received: 2/28/12

Date Applicant notified: 2/28/12

Approved: ✓ Not Approved: _____

Maria S Carroll — 2/28/12

Authorized Signature Date

APPENDIX E

LETTER TO PRINCIPALS

LETTER TO PRINCIPALS

2271 Talbot Ridge
Jonesboro, GA 30236

(770) 472-3932

Principal, Suburban Secondary School
Suburban County Schools

Dear Principal:

As you know, I am completing my doctoral degree in educational administration through Georgia Southern University and I am currently in the dissertation phase of the program. I am writing to request permission to collect data from the teachers of Suburban Secondary School as part of my dissertation.

I wish to survey all teachers using the attached survey as soon as possible. The survey data will be used to develop questions for a focus group discussion with six teachers at Suburban Secondary School. My study is designed to examine teachers' perceptions of block scheduling.

To assure anonymity, information that is provided in this study will not be connected to participating teachers, the school or the school district in any way. An experienced focus group moderator (third party not affiliated with the school district) will convene the focus group. Data will be reported in aggregate form only.

Your support of this request will be appreciated. You may expedite your response to this request by checking the appropriate box below, signing, and returning this letter to me. Thank you in advance for your support.

Sincerely,

Vern Mamon
Doctoral Candidate
Georgia Southern University
Advisor: Dr. Lucindia Chance

I support this request _____ _____
Signature

I do not support this request _____

APPENDIX F

COVER LETTER

COVER LETTER

Dear Colleague:

My name is Vern Mamon. I am principal at Winston Dowdell Academy and also a doctoral student in the College of Education at Georgia Southern University. The attached questionnaire is part of my dissertation entitled *Secondary Teachers' Perceptions of Block Scheduling.*

I have obtained permission from your superintendent and principal to invite you to participate in this study by completing the questionnaire. I would like to ask you to complete the attached survey. Completion of the survey will require approximately 10 minutes. When you have completed the questionnaire, please use the enclosed self-addressed stamped envelope to return it to me, postmarked no later than Friday, (date to be determined). Completion and return of the questionnaire will indicate permission to use this information you provide in the study. Information from the questionnaire will be reported in summary form and will not be reported individually by school system or school. If you would like a copy of the study's results, you may indicate this by writing your desire to receive or not to receive this information on the bottom of the completed questionnaire.

Participation in the study is strictly voluntary and you may withdraw at any time during the study. No benefits or risks are expected to result from your participation in this study. If you have questions, please feel free to contact me at (770) 472-3932 or (404) 597-0738, or you may contact me at vlmamon@bellsouth.net. Should you have questions or concerns about your rights as a research participant, I encourage you to contact the IRB coordinator at the Office of Research Services and Sponsored Programs at (912) 681-5465.
Thank you in advance for your help.

Sincerely,

Vern Mamon
Doctoral Student at GSU

APPENDIX G

TEACHER INVITATION TO PARTICIPATE IN A FOCUS GROUP

TEACHER INVITATION TO PARTICIPATE IN A FOCUS GROUP

Would you be willing to participate in a **90-minute focus group** that will discuss the block scheduling format? If so, please check your preference for times and dates below (check as many as you may be available to aid in scheduling).

Snacks and beverages will be provided. All participants will receive a copy of the results of the study upon completion.

Please circle all that apply. I am able to participate on the following:

If you are willing and able to participate, please provide your name, email address, and a phone number where you can be reached.

Name: _____

E-mail Address: _____

Phone: _____

If you are unable to participate, but would like to receive a copy of the results of this study, please include your e-mail address here:

E-mail address: _____

Thank you,

Vern Mamon
vlmamon@bellsouth.net

APPENDIX H

INFORMED CONSENT

INFORMED CONSENT

Dear _____,

You are cordially invited to participate in a research study. The purpose of this study is to examine the perceptions of public secondary school teachers regarding block scheduling and to identify the perceived advantages and disadvantages of using the block schedule in three secondary schools in one suburban school system in Georgia. If you choose to participate in this study, you will be asked to participate with other teachers on one, semi-structured focus group session from one to two hours in length. You will be asked questions about the effectiveness of block scheduling in your school.

With the permission of all participants, the focus group session will be audiotape recorded. The tapes will be transcribed and tapes and transcripts will be securely stored until analysis is completed, at which time both tapes and transcripts will be destroyed.

There are no anticipated risks to participants other than those experienced in everyday activity. There will be no direct or immediate personal benefits from your participation in this research. There is no compensation for participating in this project.

The results of the study will be kept confidential by the interviewer. Neither your name nor any other personal identifier will be associated with the information you supply. Publications from the findings will use pseudonyms and mask personal identifiers. Please note, however, that anonymity cannot be guaranteed due to the group nature of focus group sessions.

Your participation in this research is strictly voluntary. You may refuse to participate at all, or choose to stop participation at any point in the research, without fear or negative consequences of any kind. You may ask that the tape recorder be turned off at any time during the interview.

You also have the right to review the results of the research if you wish to do so. A copy of the results may be obtained by contacting the researcher at the address below:

Vern L. Mamon, Principal
Winston Dowdell Academy
1 Dowdell Street
Newnan, GA
(770) 254-2870

I have read and understand the information explaining the purpose of this research and my rights and responsibilities as a participant. My signature below designates my consent to participate in this research, according to the terms and conditions outlined above.

Signature_____ Date_____

Print Name: _____

APPENDIX I

Frequency by Category for Research Question 5

Frequency by Category for Research Question 5:

What are secondary teachers' impressions of the block scheduling format?

		Response Category		
Pseudonym	Focus Group	1	2	3
Participant 1	A	1	0	0
Participant 2	A	1	0	0
Participant 3	A	1	0	0
Participant 4	A	0	1	0
Participant 5	A	0	0	1
Participant 6	A	1	0	0
Participant 7	A	0	1	0
Participant 8	B	1	0	0
Participant 9	B	1	0	0
Participant 10	B	1	0	0
Participant 11	B	0	1	0
Participant 12	B	1	0	0
Participant 13	B	1	0	0
Participant 14	B	1	0	0
Participant 15	C	0	1	0
Participant 16	C	0	1	0
Participant 17	C	0	1	0
Participant 18	C	0	1	0
Participant 19	C	0	1	0
Participant 20	C	0	0	1
Participant 21	C	1	0	0
Total *f*		11	8	2

Note. 1 = Favorable; 2 = Unfavorable; 3 = Ambivalent.

APPENDIX J

Frequency by Category for Research Question 6

Frequency by Category for Research Question 6

Did your instructional methods and/or practices change when you used the block? If so, in what way(s)?

		Response Category				
Pseudonym	Focus Group	1	2	3	4	5
Participant 1	A	0	0	0	1	0
Participant 2	A	1	0	0	0	0
Participant 3	A	0	0	0	0	1
Participant 4	A	0	1	0	0	0
Participant 5	A	0	1	0	0	0
Participant 6	A	1	0	0	0	0
Participant 7	A	0	0	0	1	1
Participant 8	B	0	1	0	0	0
Participant 9	B	0	1	0	0	0
Participant 10	B	1	0	0	0	0
Participant 11	B	0	0	1	0	0
Participant 12	B	0	1	0	0	0
Participant 13	B	0	0	1	0	0
Participant 14	B	0	0	0	1	0
Participant 15	C	0	1	0	0	0
Participant 16	C	0	0	1	1	0
Participant 17	C	0	1	0	0	0
Participant 18	C	0	0	1	0	0
Participant 19	C	0	0	1	0	0
Participant 20	C	0	1	0	0	0
Participant 21	C	1	0	0	0	0
Total *f*		4	8	5	4	2

Note. 1 = Increased instructional opportunities; 2 = Varied activities; 3 = Depth of content; 4 = Student engagement; 5 = Adequate time.

APPENDIX K

Frequency by Category for Research Question 7

Frequency by Category for Research Question 7:

To what extent, if any, have students benefited from the block scheduling format, as perceived by secondary teachers?

		Response Category					
Pseudonym	Focus Group	1	2	3	4	5	6
Participant 1	A	0	0	0	1	0	0
Participant 2	A	1	0	0	0	0	0
Participant 3	A	0	0	1	0	0	0
Participant 4	A	0	0	0	0	1	0
Participant 5	A	0	1	0	0	0	0
Participant 6	A	0	0	0	1	0	0
Participant 7	A	1	0	0	0	0	0
Participant 8	B	1	0	0	0	0	0
Participant 9	B	1	0	0	0	0	0
Participant 10	B	1	0	0	0	1	1
Participant 11	B	0	1	0	0	0	0
Participant 12	B	0	0	0	0	1	0
Participant 13	B	0	0	0	1	0	0
Participant 14	B	0	0	1	0	0	0
Participant 15	C	0	0	0	1	0	0
Participant 16	C	0	0	1	0	0	0
Participant 17	C	0	0	0	0	1	0
Participant 18	C	1	0	0	0	0	0
Participant 19	C	0	0	0	1	0	0
Participant 20	C	1	1	1	0	0	0
Participant 21	C	0	1	0	0	0	0
Total *f*		7	4	4	5	4	1

Note. 1 = More in-depth learning; 2 = Fewer academic classes; 3 = More instructional opportunities; 4 = More time to work individually with students; 5 = Increased opportunities to know/assist students; 6 = No benefit.

APPENDIX L

Frequency by Category for Research Question 8

Frequency by Category for Research Question 8:

What are the advantages of block scheduling, as perceived by secondary teachers?

		Response Category											
Pseudonym	Focus Group	1	2	3	4	5	6	7	8	9	10	11	12
Participant 1	A	1	0	0	0	0	0	0	0	0	0	0	0
Participant 2	A	1	0	1	0	0	0	0	0	0	0	0	0
Participant 3	A	0	0	0	1	0	0	0	0	0	0	0	0
Participant 4	A	0	1	0	0	0	0	0	0	0	0	0	0
Participant 5	A	1	0	0	0	0	0	0	0	0	0	0	0
Participant 6	A	0	0	0	0	0	1	0	0	0	0	0	0
Participant 7	A	0	0	0	0	1	1	0	0	0	0	0	0
Participant 8	B	0	0	0	0	1	1	1	1	1	0	0	0
Participant 9	B	0	0	0	0	0	1	0	0	0	0	0	0
Participant 10	B	0	0	0	0	0	1	0	0	0	0	0	0
Participant 11	B	1	0	0	0	0	0	0	0	0	0	0	0
Participant 12	B	0	0	0	0	0	0	0	0	0	1	0	0
Participant 13	B	1	0	0	0	0	0	0	0	0	0	0	0
Participant 14	B	1	0	0	0	0	0	0	0	0	0	0	0
Participant 15	C	0	1	0	0	0	0	0	0	0	0	0	0
Participant 16	C	0	0	0	0	0	0	0	0	0	0	1	0
Participant 17	C	0	0	0	0	0	1	0	0	0	0	0	1
Participant 18	C	0	1	0	0	0	1	0	0	0	0	0	0
Participant 19	C	0	0	1	0	0	0	0	0	0	0	0	0
Participant 20	C	1	0	0	0	0	0	0	0	0	0	0	0
Participant 21	C	0	0	0	0	0	0	0	0	0	0	1	0
Total *f*		7	3	2	1	2	7	1	1	1	1	2	1

Note. 1 = 90-minute planning period; 2 = Benefits college-bound seniors; 3 = Uninterrupted time; 4 = Credit-hour production; 5 = Available time; 6 = Better relationships with students; 7 = Fewer students/fewer classes; 8 = Fewer disruptions/announcements; 9 = More one-on-one time with students; 10 = Fewer papers to grade; 11 = Less time to change class; 12 = Depth of content coverage.

APPENDIX M

Frequency by Category for Research Question 9

Frequency by Category for Research Question 9:

What are the disadvantages of block scheduling, as perceived by secondary teachers?

		Response Category						
Pseudonym	Focus Group	1	2	3	4	5	6	7
Participant 1	A	0	0	0	1	0	0	0
Participant 2	A	0	1	0	1	0	0	0
Participant 3	A	0	0	0	0	1	0	0
Participant 4	A	0	0	1	0	0	0	0
Participant 5	A	1	0	0	0	0	0	0
Participant 6	A	0	1	0	0	0	0	0
Participant 7	A	0	0	0	1	1	0	0
Participant 8	B	1	1	0	0	0	1	0
Participant 9	B	0	0	1	0	0	0	0
Participant 10	B	0	1	0	1	0	0	0
Participant 11	B	0	0	0	0	1	0	0
Participant 12	B	0	0	0	1	0	0	0
Participant 13	B	0	0	1	0	0	0	0
Participant 14	B	0	0	0	1	0	0	0
Participant 15	C	0	0	0	0	0	1	0
Participant 16	C	0	0	1	0	0	0	0
Participant 17	C	0	0	0	1	0	0	0
Participant 18	C	0	0	0	1	0	0	0
Participant 19	C	0	0	0	0	1	0	0
Participant 20	C	0	0	0	0	0	0	1
Participant 21	C	0	0	0	0	1	0	0
Total *f*		2	4	4	8	5	2	1

Note. 1 = Less time for parental involvement; 2 = Absenteeism/attendance; 3 = Retention of learning; 4 = student engagement; 5 = Course sequencing; 6 = Depth of content coverage; 7 = Condensed curriculum content.

APPENDIX N

Frequency by Category for Research Question 10

Frequency by Category for Research Question 10:

What features of block scheduling did secondary teachers like *best?*

Pseudonym	Focus Group	Response Category								
		1	2	3	4	5	6	7	8	9
Participant 1	A	0	0	0	0	0	0	0	1	0
Participant 2	A	0	0	0	1	0	0	0	0	1
Participant 3	A	1	0	0	0	0	0	0	0	0
Participant 4	A	1	0	0	1	0	0	0	0	1
Participant 5	A	0	1	0	0	0	0	0	0	0
Participant 6	A	1	0	0	0	0	0	0	0	0
Participant 7	A	0	0	1	1	0	0	0	0	0
Participant 8	B	1	0	0	0	0	0	0	0	0
Participant 9	B	1	0	0	0	0	0	0	0	0
Participant 10	B	1	0	0	0	1	0	0	0	0
Participant 11	B	0	0	0	0	1	0	0	0	0
Participant 12	B	0	0	0	0	0	1	0	0	0
Participant 13	B	0	0	1	0	0	0	1	0	0
Participant 14	B	1	0	0	0	0	0	0	0	0
Participant 15	C	1	1	0	0	0	0	0	0	0
Participant 16	C	0	1	0	0	0	0	0	0	0
Participant 17	C	1	0	0	0	0	0	0	0	0
Participant 18	C	0	1	0	0	0	0	0	0	0
Participant 19	C	1	0	0	0	0	0	0	0	0
Participant 20	C	0	0	1	0	0	0	0	0	0
Participant 21	C	0	0	0	1	0	0	0	0	0
Total *f*		10	4	3	4	2	1	1	1	2

Note. 1 = 90 minutes versus 150 minutes; 2 = Time format enhances coverage; 3 = More opportunity to know and assist students; 4 = 90-minute planning time; 5 = Fewer class changes/less discipline; 6 = Variety of instructional methods; 7 = Student engagement; 8 = Fewer students; 9 = More opportunity for electives.

APPENDIX O

Frequency by Category for Research Question 11

Frequency by Category for Research Question 11:

What features of block scheduling did secondary teachers like *least?*

		Response Category				
Pseudonym	Focus Group	1	2	3	4	5
Participant 1	A	1	0	0	0	0
Participant 2	A	0	0	1	0	0
Participant 3	A	1	0	0	0	0
Participant 4	A	0	1	0	0	0
Participant 5	A	0	0	1	0	0
Participant 6	A	0	0	0	1	0
Participant 7	A	0	0	0	1	0
Participant 8	B	0	0	0	1	0
Participant 9	B	0	0	1	0	0
Participant 10	B	0	0	0	0	1
Participant 11	B	0	0	0	0	1
Participant 12	B	0	0	0	0	1
Participant 13	B	1	0	0	0	0
Participant 14	B	0	0	0	1	0
Participant 15	C	1	0	0	0	0
Participant 16	C	0	1	0	0	0
Participant 17	C	1	0	0	0	0
Participant 18	C	0	0	1	0	0
Participant 19	C	0	1	0	0	0
Participant 20	C	0	1	0	0	0
Participant 21	C	0	0	1	0	0
Total *f*		5	4	5	4	3

Note. 1 = Content eliminated or condensed; 2 = Student engagement; 3 = Course sequencing; 4 = Inconsistency in credits; 5 = Absenteeism and make-up work.